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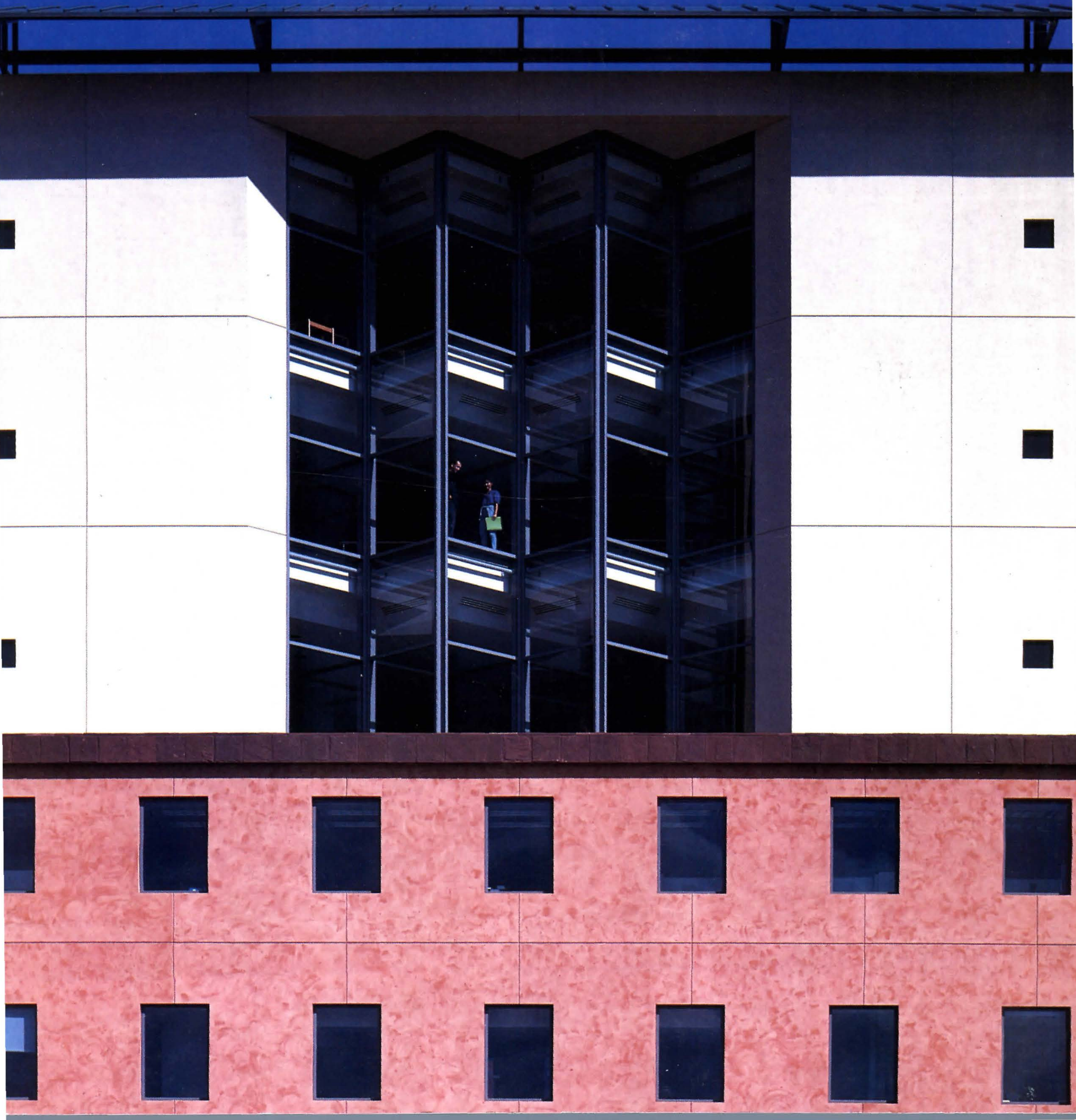


Hiccups

Birthdays

Editorial

Reinventing HUD

A proposal to repackage federal housing programs increases local responsibility.

In January, the AIA awarded its prestigious Thomas Jefferson Award for Public Architecture to Henry Cisneros, Secretary of Housing and Urban Development, for championing design as an essential element of community building. Only a month before, President Clinton had threatened to abolish HUD as a cost-cutting measure to shrink the federal government.

What cruel irony for architects: The proposal to dismantle HUD comes at a time when the federal agency, under Cisneros' direction, has placed more emphasis on the value of grassroots planning and design than ever before in its 60-year history. Last year, for example, the agency drew upon the expertise of the AIA to produce *Vision/Reality*, a guide to community development generated by local organizations and residents.

Faced with the possible elimination of HUD, Cisneros issued a counterproposal to streamline his agency. The reinvented HUD would consolidate 60 housing and community development programs into three new funds to be awarded to states and localities. Cisneros' goal is to get rid of nonperforming programs and place government monies into the hands of communities for family and individual housing assistance.

In addition, he proposes to either make public housing competitive on the private market or demolish it altogether. Displaced tenants and recipients of other housing assistance would receive portable housing certificates. Cisneros' goal is to link the voucher to the person, not the place, allowing low-income families to choose where they live.

Many of these reinvention plans sound appealing. Letting communities decide how to spend HUD funds—with subsidies directed to the person instead of on the housing—has the potential to move the poor out of troubled inner-city projects. But by giving the responsibility to local governments, who would determine the eligibility of voucher recipients, Cisneros assumes all cities and towns to be as socially responsible as the successful examples in *Vision/Reality*. In handing out vouchers, these local officials will no doubt prefer candidates who are moderate-income and working rather than unwed mothers, immigrants, or the homeless. Such discretion opens the possibility that housing assistance will be directed away from those in real need—the unemployed poor.

Moreover, HUD's vision of public housing tenants moving easily from city to suburb is naïve. Not only are low-rent apartments severely limited in most suburbs, but the not-in-my-backyard sentiment is pervasive. Current HUD programs indicate that relocating the poor from the inner city to surrounding areas is successful only when accompanied by government-supported housing searches and social services.

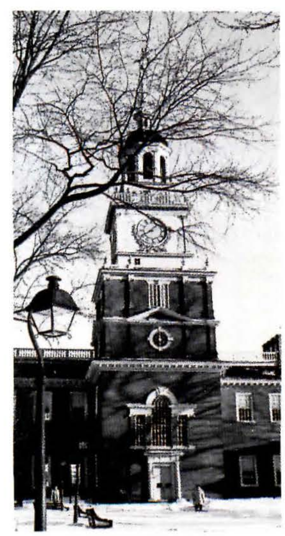
Despite its flaws, HUD's blueprint is intended to decentralize poverty and provide more housing choices—a step in the right direction. Architects, too, may benefit in the process: Local officials are likely to be more receptive to creative, community-based design than are federal bureaucrats, who are concerned primarily with enforcing regulations and controlling costs.

HUD deserves a second chance; its overhaul might indeed open our eyes to new ways of solving housing problems. But to protect the poor, those involved in housing at the community level—including architects—will have to monitor how HUD's diminished resources are ultimately distributed. Only through conscientious oversight will Cisneros' new vision remedy current urban realities.

Deborah K. Dietsch

PLACE OF AMERICAN INDEPENDENCE.

Independence Hall, Philadelphia



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Letters

Classical myths

The cover of the November 1994 issue made me wish I was color blind. Expecting to find an article on the circus, my jaw dropped as I discovered the cover was a detail of a newspaper building (pages 72-79).

A newspaper embodies mass production, streamlined presses, speed of printed communication, computers, and the sound of presses in action. Greenberg's building fails to express these functions. If we could see the printing presses from the outside, we might gain an idea of what the building is; instead we are left looking at yet another brick and concrete lump with an ancient Greek temple stuck on it.
Brant T. Murray
Wiley & Wilson
Lynchburg, Virginia

Allen Greenberg may embellish it with noble and lofty words about democracy, but Classical architecture cannot embody the ideals architecture ought to develop and realize today (remember, there were slaves as those columns went up). Classical architecture was appropriate only in history. Throwing around columns in the Classical mode is not design but rather a slavish copying of extinct forms.
Robert Brandeis
Mountain View, California

I was gratified to see over a whole issue on the Classical tradition. The breadth of your coverage shows that the term "Classical" casts a very wide net indeed.

However, as we embrace what we like in architecture and call it "Classical"—the humane, the well crafted, the detailed, the beautifully drawn—we are simply defining new groups of "ins" and "outs," conveniently drawing into the tent all that is best about traditions we subscribe to and leave outside what is worst. We need to avoid sentimentality or else we will have created only yet another fad.
Jay Turnbull, AIA
Page & Turnbull
San Francisco, California

Celebrate, not nitpick

I was disturbed by the "Protest" about the addition to the Baltimore Museum of Art (November 1994, page 55). My experience was one of delight: the addition is one of the most successful encounters with art I've had occasion to observe.

The museum's approach and site conditions are inaccurately portrayed. Practitioners know how difficult it is to produce a successful building as complex as a major museum addition; we should celebrate such efforts, not nitpick with biased concern and faint praise.
Mark Karlen, AIA
Dean, Art & Design
Fashion Institute of Technology
New York City

Correction

The Florida Aquarium featured in the News section (December 1994, page 22) was completed as a joint venture of San Francisco-based Esherick Homsey Dodge & Davis and Hellmuth, Obata & Kassabaum of St. Louis, Missouri.

Events

Exhibitions

HANOVER, NEW HAMPSHIRE. "The Art and Architecture of Charles A. Platt," March 25-May 28 at Dartmouth College. Contact: (603) 646-2808.

NEW YORK CITY. "Warchitecture," a compilation of architects' work in Sarajevo, February 4-March 18 at StoreFront for Art and Architecture. Contact: (212) 431-5795.

NEW YORK CITY. "Kid City," an interactive exhibit exploring New York City's built environment, February 15-May 21 at the Municipal Art Society. Contact: (212) 935-3960.

WASHINGTON, D.C. "Italian Renaissance Architecture: Brunelleschi, Sangallo, Michelangelo," through March 19 at the National Gallery of Art. Contact: (202) 737-4215

WASHINGTON, D.C. "Thomas Jefferson's Academical Village," February 3-April 16 at The Octagon. Contact: (202) 638-3221.

Conferences

BOSTON. "Restoration '95," February 26-28. Contact: (617) 933-9699.

CHICAGO. "The Art of Building Cities," organized by the Classical Architecture League. Registration deadline: April 1. Contact: Michael Lykoudis, (219) 631-6168.

FREIBURG, GERMANY. Call for papers for the International Making Cities Livable Conference, to be held September 5-9. Submission deadline March 1. Contact: (408) 626-9080.

MONTEREY. "Seeing Is Believing?" Monterey Design Conference, sponsored by the AIA California Council, March 31-April 2. Contact: (800) 886-7714.

TAMPA. Health facility planning, design, and construction conference, sponsored by the AIA Academy of Architecture for Health and the American Hospital Association, March 5-8. Contact: (202) 626-7482.

Competitions

Labor Interpretive Center design competition, sponsored by Minnesota's Capitol Area Architectural Board. Qualifications by **February 13**. Contact: (612) 296-6592.

American Society of Architectural Perspectivists' drawing competition. Entry deadline: **February 15**. Contact: (617) 951-1433, ext. 225.

New England Healthcare Facilities Design Awards. Deadline: **February 28**. Contact: Boston Society of Architects, (617) 951-1433.

1995 Benedictus Awards, sponsored by DuPont. Entry deadline for professionals: **April 4.** Student registration deadline: **March 8**. Contact: (800) 533-1313.

College housing design competition, sponsored by EFCO Corporation and Drury College, Missouri. Entry deadline: **April 1**. Contact: David Hutchens, (800) 221-4169.

News

HENRY GROSSMAN

BBB: Sarah Tomerlin Lee, Richard Southwick, Fred Bland, Richard Blinder, Jack Beyer, John Belle, James Marston Fitch (front row).

Beyer Blinder Belle Wins AIA Firm Award

Nearly three decades of historic preservation have secured the future of New York City's most visible landmarks—and earned Beyer Blinder Belle Architects and Planners the AIA's 1995 Firm Award. A list of the 26-year-old firm's projects reads like a tourist's itinerary of New York: Ellis Island, Grand Central Station, Central Park, Henri Bendel, South Street Seaport.

Founded by John H. Beyer, Richard L. Blinder, and John L. Belle in 1968, Beyer Blinder Belle began by developing new housing strategies for historic neighborhoods in Manhattan, the Bronx, and Brooklyn. Expansion during the 1970s and 1980s called for the recruitment of three additional partners: James Marston Fitch, founder of graduate programs in historic preservation both at Columbia University and at the University of Pennsylvania; Frederick Bland; and, most recently, Richard Southwick. Preservation expertise enabled the firm in 1982 to capture the first of its many monumental commissions: the restoration of Ellis Island, undertaken with Notter Finegold + Alexander of Boston and completed in 1990.

The Museum of Immigration at Ellis Island served as a stepping stone to other high-profile preservation projects. In 1988, for example, the firm was awarded the 10-year restoration of Grand Central terminal in conjunction with Harry Weese and Associates.

An interest in history links Beyer Blinder Belle's restoration work to its new buildings. "We bring to all of our projects an understanding of the historic roots of a site," says Belle. The firm's 28 travel plazas for the New York State Thruway Authority (ARCHITECTURE, August 1993, 66-71), for example, evoke the rustic imagery of the nearby Adirondacks and Catskills.

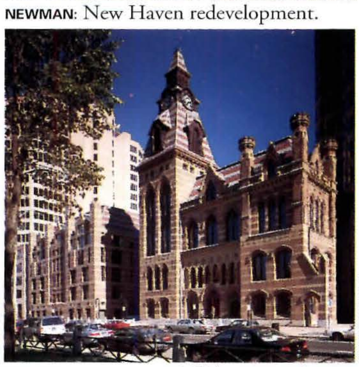
With built work in Denver, Salt Lake City, Chicago, Boston, and Philadelphia, the 80-member firm intends to expand to international markets. "Our work has been rooted in finding new uses for old buildings," explains Belle. "There are a number of major regions in the world where this approach to conserving a city's resources is becoming current."

Faced with the inevitable task of merging the goals of the founding partners with those of a younger generation, Belle is optimistic. "We have always found value in combining our talents and accumulating all of them in a single effort."—*A.C.S.*

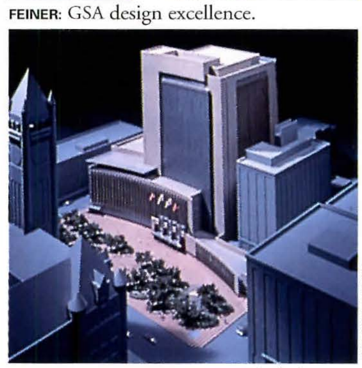

NEWMAN: New Haven redevelopment.


FEINER: GSA design excellence.

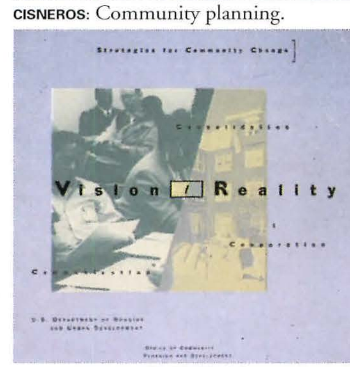

CISNEROS: Community planning.


STEVE ROSENTHAL

NEW HAVEN CITY HALL: 1994 preservation.


JOCK POTTLE / ESTO

MINNEAPOLIS COURTHOUSE: KPF's design.



VISION/REALITY: AIA-HUD joint venture.

AIA Announces Jefferson Awards

Last year's keynote speaker at AIA's Accent on Architecture, Secretary of the U.S. Department of Housing and Urban Development Henry G. Cisneros, attended this year's ceremonies as well—this time as an award recipient. One of three professionals selected by the AIA to receive the 1995 Thomas Jefferson Award for Public Architecture, Cisneros shares the honor with Edward Feiner of the General Services Administration and Herbert Newman, a New Haven architect.

Armed with professional degrees in public administration and urban planning, Cisneros has spearheaded efforts to streamline housing and community development policies; HUD's Consolidated Planning Process will take effect this year.

Former deputy director of GSA's Office of Design and Construction, Ed Feiner was promoted last month to chief architect of the Public Building Service. Feiner reviews and approves the design of all major federal buildings developed for the agency, including courthouses, office buildings, and border stations. Works in progress total more than $10 billion.

In 1992, Feiner instituted the GSA Design Awards Program. The following year he directed a major reform of the architect/engineering selection process—the first in over 25 years. As a result, less experienced architects are able to pursue commissions previously awarded to a narrow field of specialized firms.

A Yale University graduate and former campus architect, Herbert Newman entered private practice in New Haven, Connecticut, following five years with I.M. Pei and Partners. Since 1964, Newman has played a significant role in shaping the city's public architecture, including the city hall, railroad station, and new arts center development.

The Jefferson winners share an understanding of the design processes that shape our public realm—Cisneros and Feiner define and oversee that process; Newman navigates its course.

California Architect Wins Kemper Award

For the second year in a row, a California State Architect has been honored with the AIA's Edward C. Kemper Award. Selected by the Board of Directors last December, Paul R. Neel had served three years in the state architect's office before assuming his current role as Dean of

NEEL: California disaster assistance.

STANLEY: Minority mentor.

EZRA STOLLER / ESTO

FORD FOUNDATION HEADQUARTERS: Roche Dinkeloo's 1967 design.

EZRA STOLLER / ESTO

FOUNDATION ATRIUM: Integrated landscape.

the College of Architecture and Environmental Design at California Polytechnic State University. The 1993 Kemper Award was awarded to the current California State Architect, Harry Hallenbeck.

Neel has built a reputation as a national leader in disaster recovery efforts. He initiated California's urban planning volunteer response program and was instrumental in developing the California Emergency Design Assistance Team, which helps neighborhoods devastated by natural disasters.

Nominated for his contributions to the AIA and the architectural profession, Neel is the 45th recipient of the award named after the AIA's first Executive Director. A proponent of continuing education, Neel helped implement the Intern Development Program during his eight-year term as commissioner to the AIA's Continuing Education Committee. He also served on the 1994 AIA/NCARB Reciprocity and Licensing task force.

Young Citation Honors Atlanta Architect

The first African American graduate of the Georgia Institute of Technology College of Architecture, William J. Stanley III is the 1995 recipient of the Whitney M. Young, Jr. Citation. Named after the late civil rights leader who challenged architects to assume social responsibility, the citation will be presented to Stanley in his hometown, Atlanta, at this year's AIA convention.

President of the National Organization of Minority Architects from 1990 until 1992, Stanley worked with the AIA Minority Resources Committee to establish the "Architecture in Schools" design competitions and to initiate seminars on cultural diversity. He has also volunteered his expertise to the National Black Arts Festival, the Sweet Auburn Area Improvement Association, and local schools.

The 46-year-old architect established a private practice in 1977, which he shares with wife Ivenue Love-Stanley. Current projects of the 30-person firm Stanley, Love-Stanley include the 1996 Olympics Aquatic Center at the Georgia Institute of Technology and the National Black College Alumni Hall of Fame Foundation at Clark Atlanta University. The AIA nomination committee applauds the husband-and-wife team for "contributing to the economic growth and empowerment of minority communities in Atlanta and the Southeast."

Ford Foundation Wins AIA 25-Year Award

In the 28 years since its completion, the Ford Foundation Headquarters in New York has not been altered—a testimony to its sustained success. Last month, the AIA honored the highrise with its 25-year Award.

Designed by Kevin Roche John Dinkeloo Associates, the 1967 steel-framed structure added a new dimension to the minimalism of its Modern predecessors: quality of life in the workplace. The 12-story building is arranged around a 130-foot-high atrium, which hosts changing displays of greenery and doubles as a waste air chamber and thermal buffer. The AIA awards jury, chaired by New York architect Frances Halsband, cited the building for its "outstanding collaboration of landscape and architecture."

News

On the road

The latest radio ads for General Motors' Buick Park Avenue Ultra feature New York architect Hugh Hardy in reverie over the luxury automobile. Subtle allusions to architecture permeate the 60-second dialogue. "This is a car whose basic engineering's exactly right," lauds Hardy. "It's comfort, like Park Avenue," he continues. "This car is real estate ... it's got good bones." Hardy was recruited for his architectural expertise by Buick's advertising agency McCann-Erickson Detroit. A new spot featuring Lauren Rottet, director of interior design at DMJM/Rottet, is scheduled to debut this month.

London bridges

Now that American architects Skidmore, Owings & Merrill, Pei Cobb Freed & Partners, Kohn Pedersen Fox Associates, and Cesar Pelli & Associates have conquered London's Docklands with towering office buildings, many of which are still vacant, a new clutch of European firms is taking on the Thames. A series of competitions to design pedestrian bridges in London is underway. Participating firms include Nicholas Grimshaw & Partners and Alsop & Stormer. The most recently announced winning entry from Future Systems and Anthony Hunt Associates features a delicate steel structure supported above floating pontoons.

Wax walls

Researchers at the University of Dayton have developed an experimental, energy-saving wallboard that contains beads of paraffin embedded in gypsum. The wax changes from a solid to a liquid as the room temperature changes; to maintain optimal room temperature, the panel adjusts to absorb or release more heat according to ambient temperature.

Urban waste

Maya Lin is designing the nation's first inner-city recycling plant for the Bronx Community Paper Company. The plant is the brainchild of Yolanda Rivera, head of a community development group called Banana Kelly. Fed up with the garbage that littered her South Bronx neighborhood, Rivera initiated a campaign for corporate support that has yielded $500,000 from Modo Paper of Stockholm and S.D. Warren, a Scott Paper subsidiary. The plant, for which construction is scheduled to start this June, bears a $200 million price tag; Rivera is seeking investors to provide the remaining funds. Lin's design incorporates exposed structural members and ornamental landscaping.

Green savings

The average business spends 72 times more on its workers than it does on energy, according to a recent building study by Colorado-based Rocky Mountain Institute. If energy-conscious design results in increased productivity, it produces economic benefits of even greater value than the energy cost savings themselves. This is the premise of "Greening the Building and the

Bottom Line: Increasing Productivity Through Energy-Efficient Design." Coauthors William D. Browning and Joseph J. Romm explore the effect of energy-efficient building design on worker productivity and a business's profits. In one study, a $300,000 retrofit resulted in annual energy and maintenance savings of about $52,000. However, productivity gains—a result of better lighting and quieter, more comfortable space—are valued at $500,000 a year.

Literary crusade
As a tourist attraction for the 1996 Olympics, German manufacturer Daimler-Benz plans to purchase and restore the dilapidated Atlanta building that contains the charred remains of the two-room apartment where Margaret Mitchell wrote *Gone With the Wind.* Following the games, the company plans to donate the property to either the city or to Margaret Mitchell House, a nonprofit foundation that has fought to preserve the historic building.

Hollywood hopes
Baltimore-based RTKL has established a new entertainment division, ID8, to handle the firm's recreational projects, including the 71,000-square-foot Irvine Entertainment Center in Southern California. Directed by Los Angeles-based Vice President Paul Jacob, ID8 will take on varied projects, including amusement parks, hotels, casinos, theaters, and sports arenas.

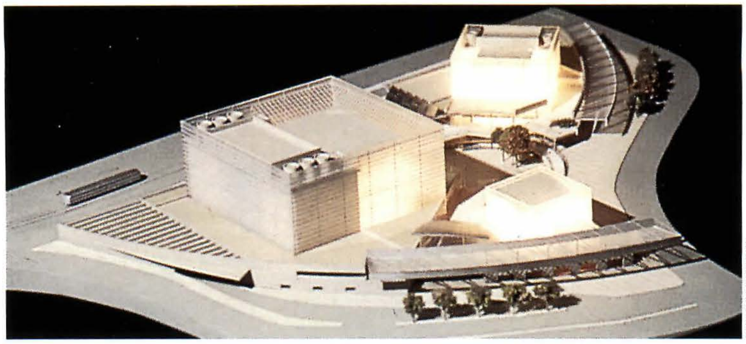
Bad roll
Architects: Be careful before treading into uncertain territories, especially the tempting prospects of casinos on American Indian reservations. All that remains of a $10 million casino, nightclub, and hotel complex proposed in 1991 is a partially completed building, unpaid subcontractors, and a legal nightmare for Minneapolis-based architects Tushie-Montgomery Associates, who claim the Sokoagon Chippewa tribe of Mole Lake, Wisconsin, owes them $536,386. The tribe elected a new tribal council after construction had begun, and the new leaders backed out of the project. In the event of conflict, the contract stipulated binding arbitration—which yielded a ruling in Tushie-Montgomery's favor. Yet a federal court decision subsequently determined that the tribe has sovereign immunity, and the contract does not allow for enforcement of an arbitrator's ruling. An appeal to a higher court is in progress.

Circus preservation
Ann Beha Associates is restoring Ca' d'Zan, the former residence of circus legend John Ringling on the 60-acre campus of the Ringling Museum of Art in Sarasota, Florida. The Venetian-style house displays Ringling's original furniture and the renowned circus showman's collection of European art.

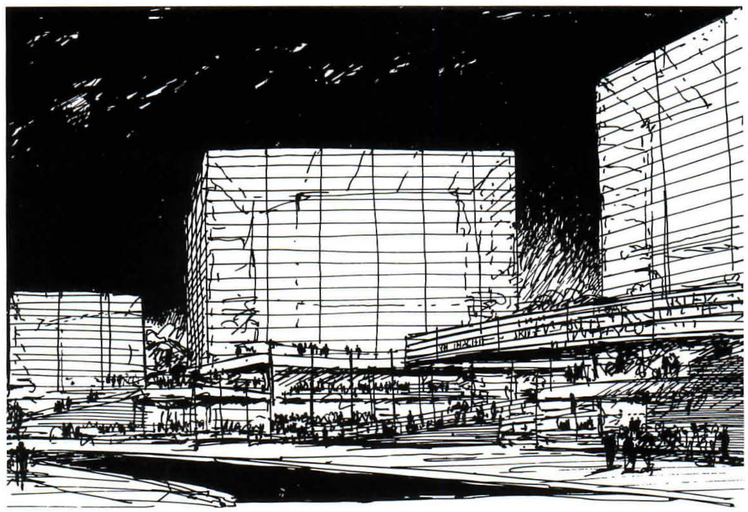
New commissions
The U.S. General Services Administration has selected The Kling-Lindquist Partnership as the lead architect for the 2.6 million-square-foot Food and Drug Administration Campus Facilities. The government agency is currently housed in 40 buildings throughout the metropolitan Washington area. RTKL will assist Kling-Lindquist in the project's planning, site utilization, architecture, engineering, and interior design. Eskew Filson Architects is designing the 50,000-square-foot International Game Fish Association World Headquarters and Fishing Hall of Fame in southern Florida. Booth/Hansen & Associates is designing a master plan for Roosevelt University, north of Chicago. The Heckscher Museum of Art has selected Centerbrook Architects & Planners to design a 28,000-square-foot addition to its existing facility in Huntington, New York. Pei Cobb Freed & Partners won a competition to design the Near West Campus Redevelopment project at Stanford University; the firm was selected over Kallmann McKinnell & Wood, Robert A.M. Stern Architects, and Zimmer Gunsul Frasca Partnership.

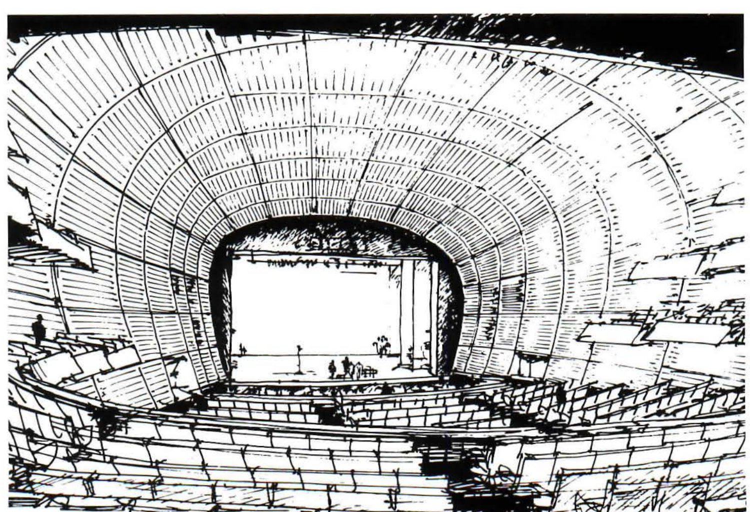
On the Boards

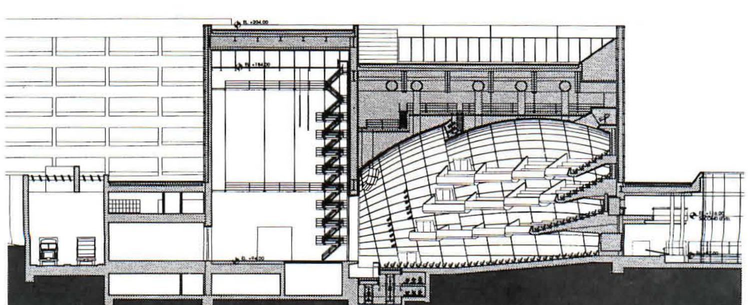
A new performing arts center in Baltimore will anchor the city's cultural district.



TAKESHI MIYAKAWA







Baltimore Center for Performing Arts
Baltimore, Maryland
Rafael Viñoly Architects

Seeking a new home for opera and theater, a private group launched a design competition last year for a $60 million performing arts center in Baltimore. The site: a 5.8-acre parcel next to the 14-year-old Meyerhoff Symphony Hall, designed by Pietro Belluschi and Jung Brannen Associates. The project: a 2,800-seat hall and a 650-seat hall, as well as a 200-seat multipurpose room and related spaces.

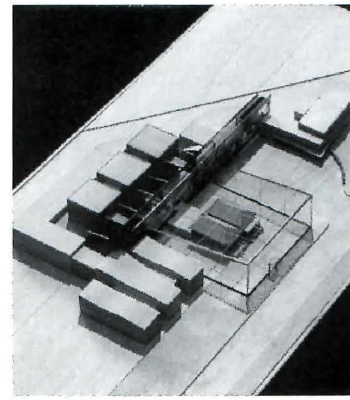
First to finish was Rafael Viñoly, who proposed an urban design strategy that would help knit the center into the surrounding area. Viñoly broke the complex into three glass cubes—two for the performance halls and a third containing a restaurant and other social functions—and grouped them around a central plaza, providing a new public space. The glass-clad structures are positioned so that the Meyerhoff Symphony Hall implies a fourth element of the composition—acknowledging its significance to the Mount Royal cultural district.

Designed to be brightly lit at night, Viñoly's cubes reflect the shifting street grids around the site, with one performance hall aligned with the downtown street grid and the second aligned with the grid of an historic neighborhood to the north. One backstage support area serves both halls, and large electronic marquees broadcast public announcements to passersby. The architect took advantage of a natural drop in elevation to create a ramp that would encourage pedestrian circulation through the plaza.

The competition's runners-up were (in ranked order): Antoine Predock Architect of Albuquerque with Ayers Saint Gross of Baltimore; Lett/Smith Architects of Toronto; and Arata Isozaki & Associates of Tokyo with Design Collective of Baltimore. According to the Baltimore jurors, Viñoly's plan represented the most persuasive urban design approach for the site and "may well result in an exciting cultural center." When completed, the performing arts center will anchor the one-mile-long "Avenue of the Arts" that Baltimore is planning for the downtown portion of a 14-mile light rail line that opened in 1992.—*Edward Gunts*

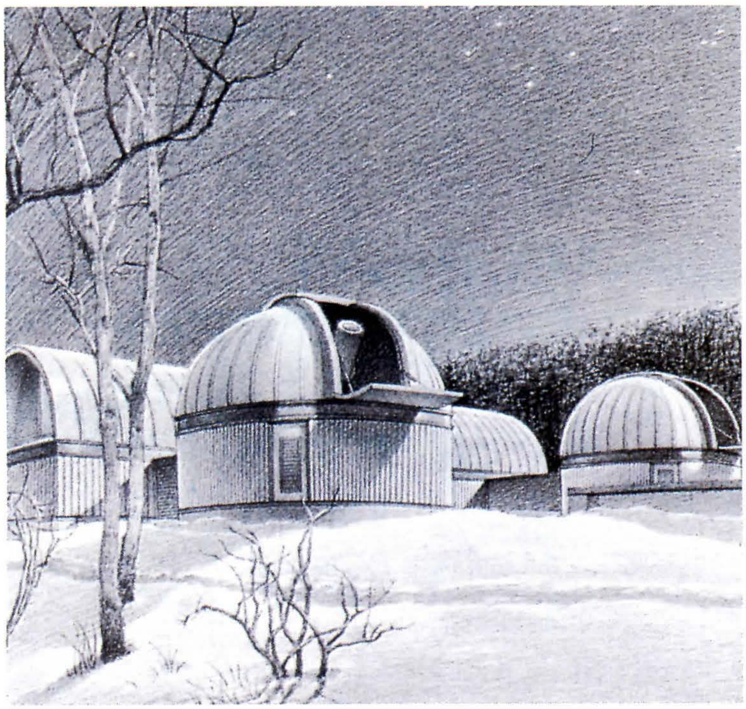
On the Boards

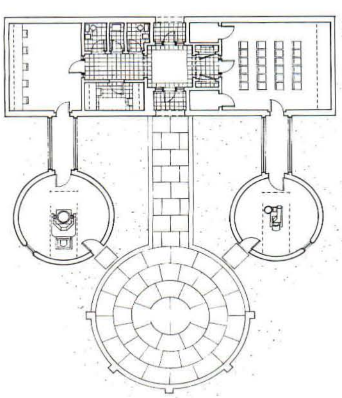
The hits of Motown are celebrated in a new museum.



TAKESHI MIYAKAWA

On the Boards





Vassar College Observatory
Poughkeepsie, New York
Roth and Moore Architects

Students at Vassar College have stargazed from a single-domed brick observatory since 1860, but heat and light from nearby buildings and the structure's lack of insulation have distorted views. A new observatory designed by Roth and Moore Architects on higher ground will offer greater thermal efficiency and sharper images. The new development comprises two domes housing telescopes; a building containing classrooms and faculty offices; and an observation deck. Students will view constellations on video monitors in the classroom.

To reduce thermal radiation, the domes will be clad in lightweight corrugated aluminum sheathing with louvered openings. Construction of the observatory is scheduled to begin this fall.—*A.C.S.*

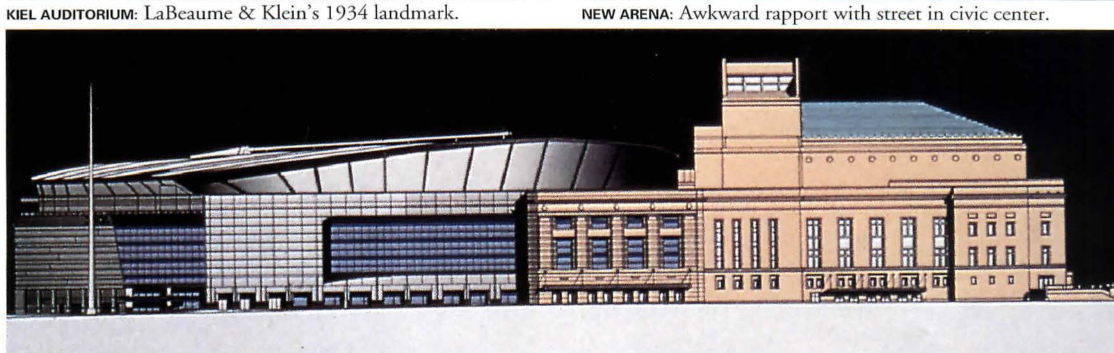
WE CATER OV
GET-TOGETHERS

Herman Miles Trucking Inc., El Paso, Texas, 8,500 sq. ft.;
Architect: Joe M. James, AIA; Structural Engineer: Pedro Herrera; General Contractor: Balboa Enterprises, Inc.; Steel Fabricator: Area Iron & Steel

A new hockey arena for St. Louis misses its urban goal.

KIEL AUDITORIUM: LaBeaume & Klein's 1934 landmark.

NEW ARENA: Awkward rapport with street in civic center.



EAST ELEVATION: Kiel Center (left) adds 665,000 square feet to 1934 auditorium (right), overshadowing quiet Classical volume.

New Kiel Center Slashes Downtown St. Louis

Hockey needed a new home in St. Louis, but the design of the city's new Kiel Center earns architect Ellerbe Becket time in the penalty box. The addition of this 20,500-seat arena—in a style that can only be called High Kineticism—to the dignified Classicism of LaBeaume & Klein's landmark Kiel Auditorium (1934) constitutes unsportsmanlike conduct.

After 65 years, the city's former hockey venue—a hulking, old arena near Forest Park—had outlived its useful service. The St. Louis Blues, when not on strike, badly needed someplace else to play. To the rescue came 20 local corporate boosters, the Kiel Center Partners, who decided Kiel Auditorium would be the best spot for hockey.

But the old Kiel wasn't big enough. Its auditorium only had 11,500 seats plus a 3,600-seat opera house. To tear down the old auditorium and affix a new arena to the south side, the partners hired Ellerbe Becket, who did so in strokes better suited to science fiction than to an essay in urbanism.

By glazing a transitional portion of Kiel's Classical facade with the same blue-mirrored panes and chrome mullions that clad the arena, Ellerbe Becket established a weak visual link between the new building and the old auditorium. The arena's vast, glassy curtain walls were intended to form a crystalline counterpart to the 1934 building's lithic facades, but the materials and forms of old and new are too disparate—more clash than counterpoint.

As an homage to hockey, Ellerbe Becket designed its new structure as "a building in motion, seemingly spinning away from the bowl of the arena." The result: The arena's facades are canted outward at the top to suggest centrifugal force. This gesture may lend an exciting perspective from the nearby interstate, but up close it creates an awkward relationship with the street. Furthermore, Ellerbe Becket's circular arena plan wrongly rebels against the dominant orthogonal geometries of adjacent civic buildings.

It was easy to take the old Kiel's assured, Classical massing for granted: the clarity of its lines and planes blend with the surrounding dressed-stone civic structures. Now the august auditorium is overshadowed and diminished by the glitzy, 665,000-square-foot arena, which in profile looks about as solid as the splash of a hockey puck in icy water.—*Bradford McKee*

1995 NATIONAL AIA ARCHITECTURAL PHOTOGRAPHY COMPETITION

THIS COMPETITION IS OPEN TO ANY ARCHITECT registered in the United States. The contest is also open to Associate members of the AIA and student members of AIAS in good standing. Professional affiliate members are not eligible. All entries must be postmarked by March 1, 1995, and must include a completed entry form. Images for the 1997 Engagement Calendar will be selected from all submitted entries. Entry forms and full contest details will appear in the January and February issues of *AIArchitect* or can be obtained by sending a self-addressed stamped envelope to:

AIA ST. LOUIS

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1996 Architecture Calendar Cover—*This Is My Life,* Miami Beach, Florida; Arthur J. Marcus, AIA, Miami Beach, Florida

1994 First Place—*Reflected,* Ebeltoft, Denmark; *Jens Henry Vange, AIA, St. Paul, Minnesota*

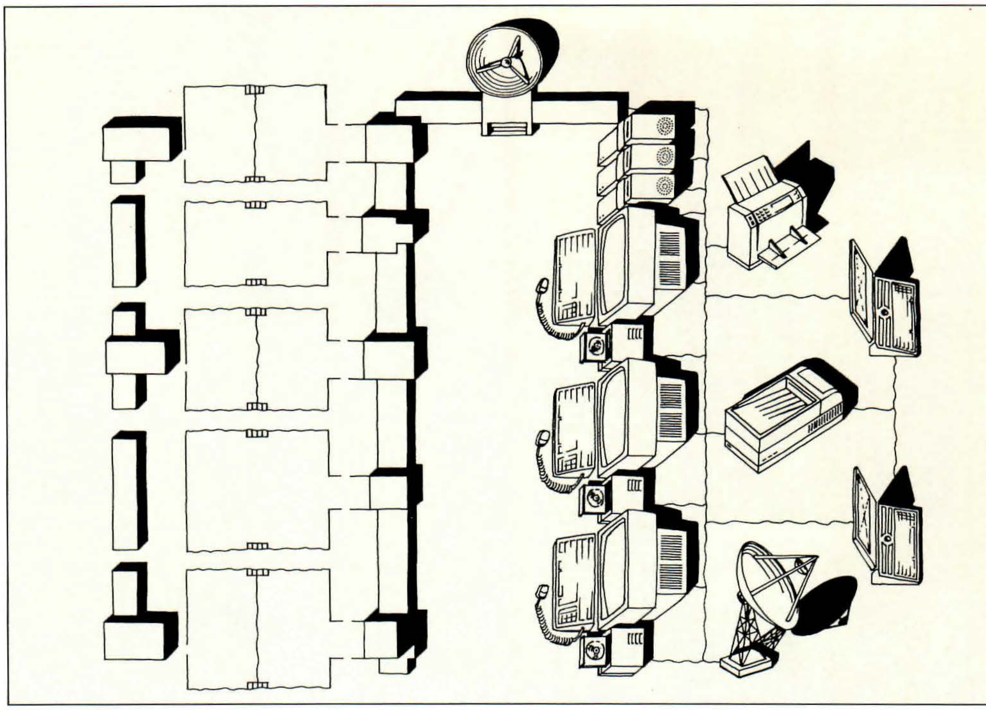
1994 Second Place—*Mysterious Glow,* Zacatecas, Mexico; Steven House, AIA, San Francisco, California

1994 Third Place—*Collage,* Arcos, Spain; Andrew Goldman, AIA, New York, New York

1994 Louise Bethune Award—*Long Red Barn,* Shelburne, Vermont; Thomas V. S. Cullins, AIA, Burlington, Vermont

Planning the Future Campus

Universities must balance technological progress with settings for social exchange.



DRAWING BY MARCOS NAVARRO

The face of the American campus has been marked by significant changes over the past 50 years. The great surge in university and college enrollment between the 1950s and the 1970s severely influenced campuses nationwide as buildings were constructed in a hurry to accommodate growing student populations. The resulting disregard for overall cohesiveness led to an erosion of human scale and clarity of place that lingers to the present day. Furthermore, much of the construction of the last few decades has reached its first or second cycle of depreciation.

What, then, are the prospects for the campus of the future? Only change remains predictable, change in diverse sectors that hold enormous portent for campus planning for the 21st century:

Technology

Rapidly merging communication and computer technologies are giving rise to a number of concepts such as the virtual library, distance learning, and telecommuting. Institutions can harvest information from nearly anywhere on earth and dispense it instantly and directly to their constituents, who can also be located just about anywhere on earth. The potential of this technology has yet to be fully comprehended. It will exert a measurable effect on campus facilities, spatial organization, and the reach of campuses everywhere. An example of this can be seen in Blacksburg, Virginia, home of the Virginia Polytechnic Institute, which is being wired so that businesses and homes will have access to the same on-line data as every office, classroom, and dormitory on campus.

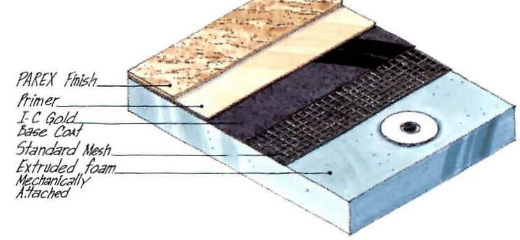
Diversity

Institutions will have to provide the setting for more heterogeneous people and cultures. According to census projections, the fastest growing college-age population segments are minority, immigrant, and low-income groups. As a matter of national, economic, and social necessity, those groups must be guided and accommodated in the higher education system. In addition, adult education and career enhancement will bring more older and part-time students to college campuses, and more working part-time students will have a pronounced impact on the scheduling and utilization of instructional, research, residential, and recreational facilities as well as on parking needs.

Globalization

The U.S. system of higher education, still the envy of the world, attracts foreign students by the tens of thousands. As the technology-driven economies of developing countries continue to evolve, the market for international students could grow exponentially. Many American campuses draw heavily on students from abroad to maintain enrollment levels. At the same time, more domestic students are spending time abroad, and American curricula are adapting to globally aware students and scholars.

PAREX



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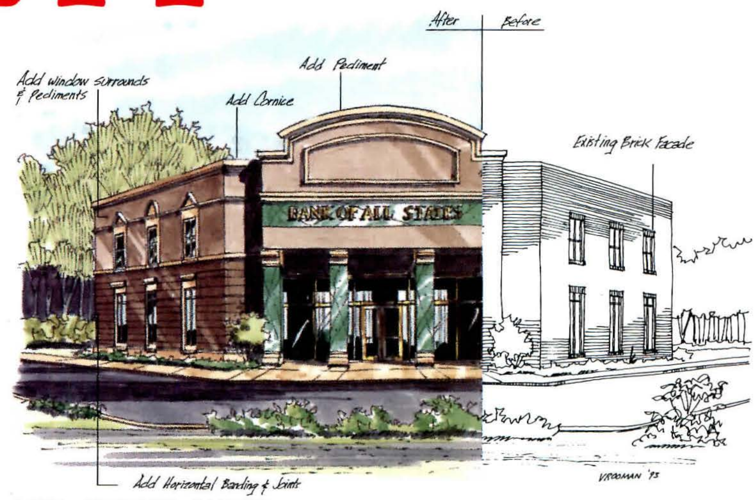

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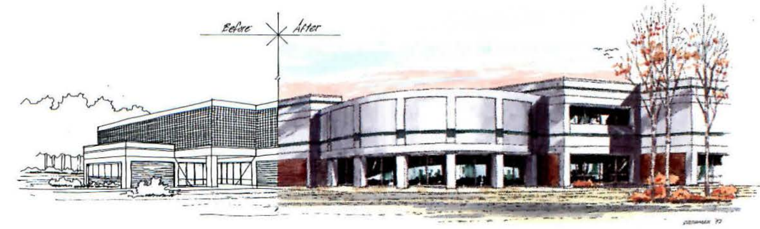

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Increased community expectations
Educational institutions fall within a narrowing spectrum of enterprises offering economic stability and cultural enrichment in many urban areas. Colleges are called on to be agents of economic revitalization and community service, a trend that is likely to increase as government privatizes those responsibilities. Many institutions are already engaged in local development and social services to ensure their competitiveness and protect their environment; the investment of Marquette University in Milwaukee, for example, in its adjacent declining neighborhoods has prompted inquiries from scores of institutions around the country.

Diminishing financial resources
Higher education is undergoing the structural changes that have accompanied the tightened fiscal regime of the 1990s. The current pressure to squeeze more productivity out of limited resources will become increasingly relentless as more sources of funding reach their limits. Needs assessments for renovating existing buildings as well as for new construction call for rigor and accountability.

Settings for interaction
While technology will deliver the learning tools of the 21st century, it cannot provide the setting for students to develop skills of interaction and empathy. Students, faculty, and administrators are well aware of how much academic life is diminished when it lacks the environment for such exchange. Therefore, architects must address the urgent need for more lounges, meeting rooms, corridor niches, courtyards, plazas, and eating places.

In designing campuses and individual buildings for tomorrow's academic communities, we should bear in mind the human desire for a center, a desire that goes back to the medieval village square. Postwar construction abandoned the traditional quadrangle and created sprawling incoherency. It is time to reevaluate the benefits of centering a campus and crafting open spaces that link in-

Institutions must demonstrate to constituents and communities how the built environment can elevate lives.

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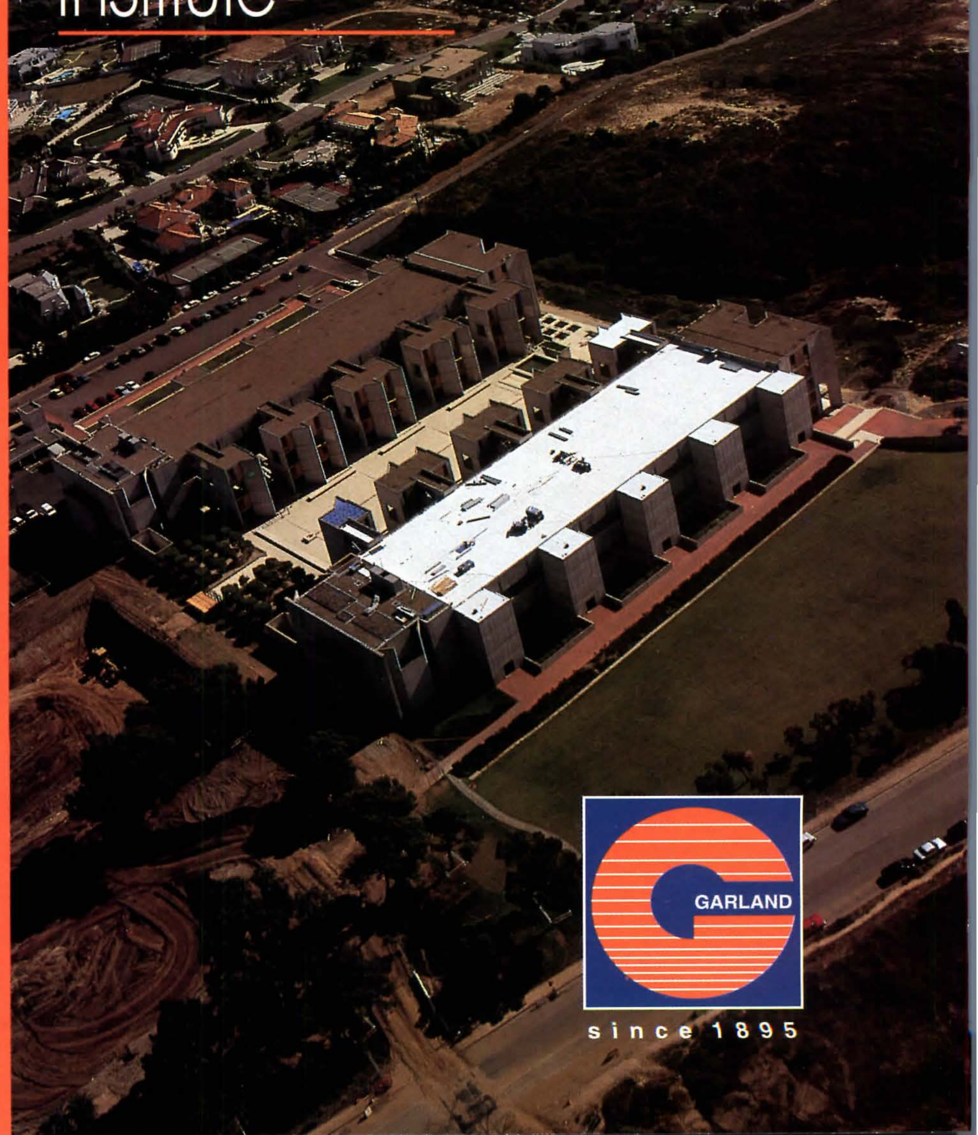

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stead of separate complexes and buildings. The University of South Florida at Tampa, constructed during the 1960s, was inaccessible and uncohesive, featuring, for example, a library sited at the outer end of a large parking lot. In the 1980s—a period of architectural return to tradition—the university began to fill in empty areas with new buildings, connecting them through courtyards and arcades. By creating these new, connective public spaces, the University of South Florida campus has become a model of how to build successful learning environments on the mistakes of the past.

Regional integrity

The campus of the 21st century will distinguish itself by demonstrating how the built environment can fit appropriately with the climate, the landscape, and the culture of the region. Campus planning over the next century must be more mindful of connections with the surroundings. It must be sympathetic to climate in the way that spaces are shaped, that buildings are oriented, that native landscape materials are utilized. A successful example is provided by the University of Illinois at Champaign-Urbana. Although attended by 30,000 students and encompassing 700 acres, its campus is built around a system of axial open spaces that link buildings in various precincts of the campus. This university's buildings are designed in different styles but are compatible in scale and height and are arranged, with regional integrity, in a Midwestern grid.

The campus of the future must become more welcoming and open to the surrounding communities as academic institutions form educational, cultural, and economic alliances with their home communities. As strategic alliances are made, placemaking will extend into the urban fabric beyond the campus. Recently, for instance, the University of Rochester united with the City of Rochester to remove a four-lane street that separated the campus and the city from the banks of the Genesee River. This change added more riverfront recreational space for both students and citizens, potentially creating a meeting-place for the two.

Whether institutions are proactive as developers of housing, commercial, recreational, and social services or simply provide moral support for the quality of the community, the character of the surrounding environment is inevitably shaped by the institution. In fact, Florida law requires that state universities adopt policies for cooperative development with their communities on issues pertinent to both, such as off-campus housing, infrastructure, and land use.

Campus as model

Ultimately, however, the mission of colleges and universities is to educate. Higher education plays a powerful role in molding the world view of those it serves, whether in the classroom, the lab, or the social experience of campus life. Institutions must demonstrate to their constituents and communities how the built environment can elevate our lives. In the American world of hardened cities, strip developments, and sprawling suburbs, there are few prototypes of a manmade environment to teach quality of place. The campus is one of them.—*Perry Chapman*

Perry Chapman, principal of Sasaki Associates, has consulted with more than 50 colleges, universities, and other nonprofit institutions.


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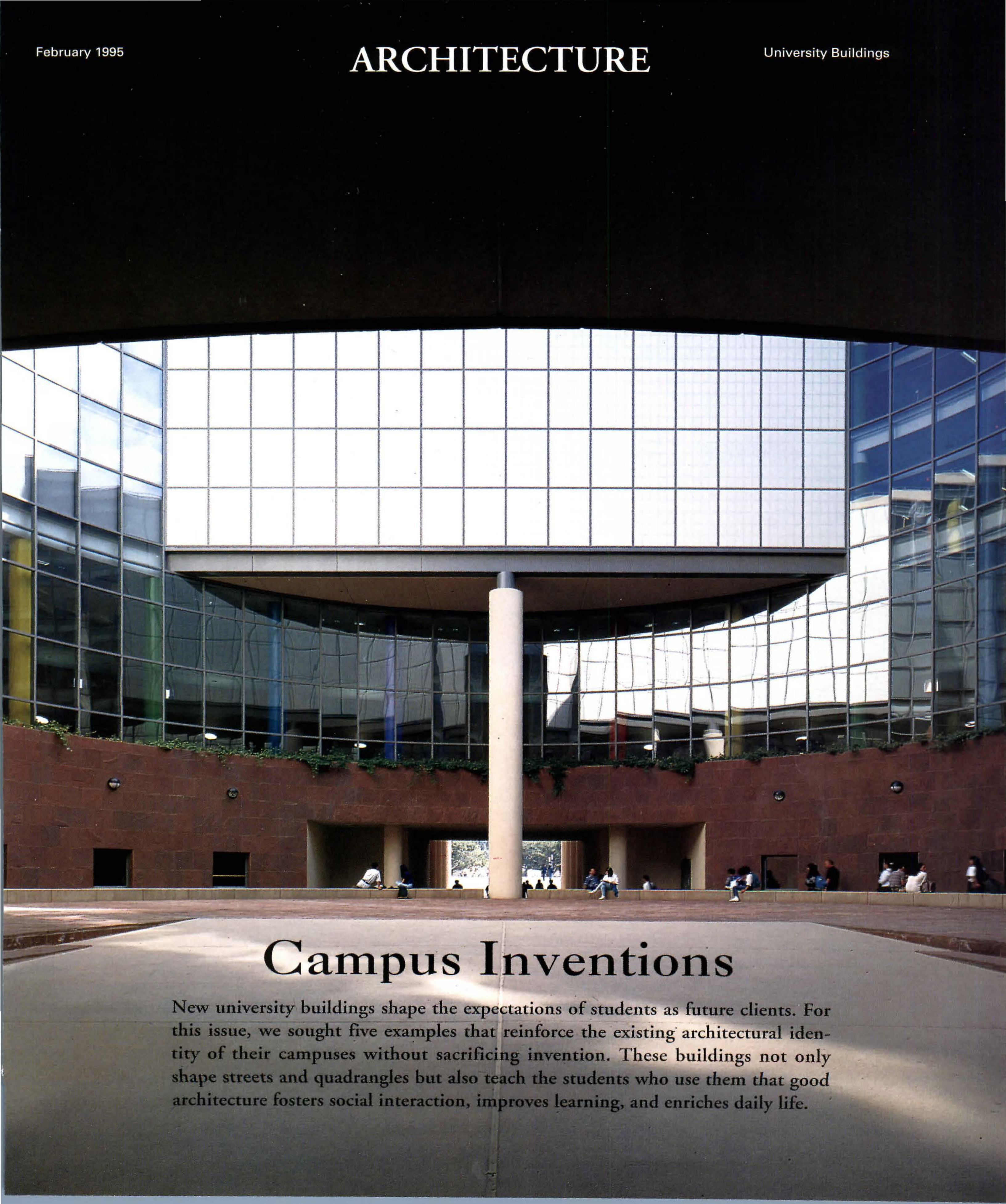


Campus Inventions

New university buildings shape the expectations of students as future clients. For this issue, we sought five examples that reinforce the existing architectural identity of their campuses without sacrificing invention. These buildings not only shape streets and quadrangles but also teach the students who use them that good architecture fosters social interaction, improves learning, and enriches daily life.

University Gateway

Science Library
University of California at Irvine
Irvine, California
James Stirling Michael Wilford and Associates, Architect

The University of California's Irvine campus is a nightmare version of Columbus, Indiana. Flashy buildings by star architects pop up everywhere, most of them second rate; few contribute to an overall image or identity that this sprawling institution desperately needs.

Into this alien landscape marched Michael Wilford and James Stirling with their $25 million Science Library. This large, formal building sits in a sea of rambling red tile roofs and, consequently, has become an instant landmark. More importantly, the 189,000-square-foot library provides the kind of concentrated urban focus that the campus has lacked. With its classical parti, sweeping stucco walls, and Mediterranean coloring, it recalls a Renaissance palazzo —solid and purposeful rather than one more *jeu d'esprit.* At the same time, its crystalline center, like the core of a geode, reminds us that James Stirling invoked Classical precedents only to twist and subvert them.

The UC-Irvine Science Library straddles the Biological Sciences Mall, one of six created by William Pereira's 1963 master plan. The center of the campus is a large circular park, from which spines radiate outward to a pedestrian and bicycle path, and farther still to streets and parking lots. Buildings are arranged along these spines by discipline, giving the campus an orderliness that often turns out to be purely theoretical.

The Bio-Sci Mall funnels students through the base of the new library, making

FACING PAGE: Science Library straddles University of California at Irvine's Bio-Sci Mall, which flows through base of new building like a public street.
TOP: Library's massive, stuccoed walls and monumental scale make it instant landmark on low-rise suburban campus.
ABOVE: From the west, the library looks like a Renaissance palazzo.

it a monumental gateway linking science buildings to the east with the medical school and a proposed laboratory quad on the west. As with his Staatsgalerie in Stuttgart, and to a lesser degree his performing arts center at Cornell, Stirling has made a sculptural statement without defying his surroundings. The library is icon and transition simultaneously.

The building consists of a circle circumscribing a round—and on the top three floors, a triangular—courtyard, with two projecting wings on the east and a narrow bar building on the west. The circular portion contains reading rooms, study areas, and four floors of stacks that make up the sides of the circumscribed triangle. The triangle helps to locate the building's contents, though one suspects that Stirling was actually more excited about getting the geometries to work together. The bar houses administrative offices, the catalog department, and additional stacks for books and monographs.

The courtyard, paved in red Indian sandstone, is used for faculty gatherings, concerts, and assorted campus events. Stirling loved to carve round spaces out of solid masses—one thinks yet again of the eloquent drum at Stuttgart—and does it here to create a miniature civic plaza that offers a hard and contained counterpoint to the soft, open landscape beyond. The courtyard also brings light to the center of the library, a dramatic improvement over its gloomy and cavernous predecessor. The circular form promotes fluid movement through the main building, with no dark corners or dead ends. It also creates several wonderful spaces, most notably the two-story periodical reading room that Stirling brightened with a typically brazen mix of red, blue, yellow, and magenta columns.

The library pampers its users. While it contains no grand reading room, it offers several smaller ones, plus hundreds of study carrels, most with windows. Two reading rooms at the top of the bar—one reserved for graduate students—offer spectacular views of what's left of Irvine's low hills and canyons.

These triumphs notwithstanding, the library is plagued with detailing problems —nothing new for Stirling. Associate architect L. Paul Zajfen of IBI Group recounts long and painful battles with the university bureaucracy over materials and details, most of which they lost. "They wouldn't trust our opinion on anything," Zajfen laments.

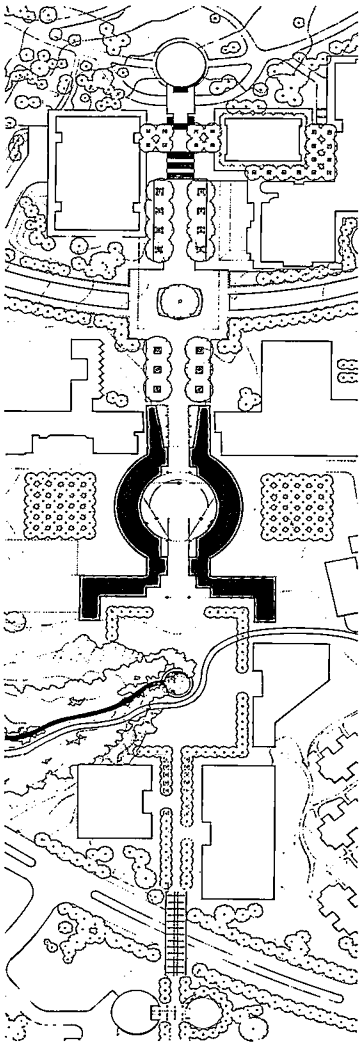
Stirling wanted a deep tomato-red stucco for the base of the building, but had to settle for a mottled pink that is likely to fade away after a few years in the Southern California sun. The central staircase connecting the ground floor with the main circulation and loan desks above is shoehorned into a space that robs it of grandeur. (A visit to Stuttgart or the Sackler Museum at Harvard confirms how important staircases were to Stirling.) The interior detailing is frequently slipshod, and the furnishings nondescript—except for the periodical reading room.

James Stirling didn't live to see the Science Library finished but one can imagine his delight at having created a Classical civic plaza in Southern California; at the building's combination of formal ingenuity and generosity toward users and neighbors; and at the design and construction team getting the big things mostly right.

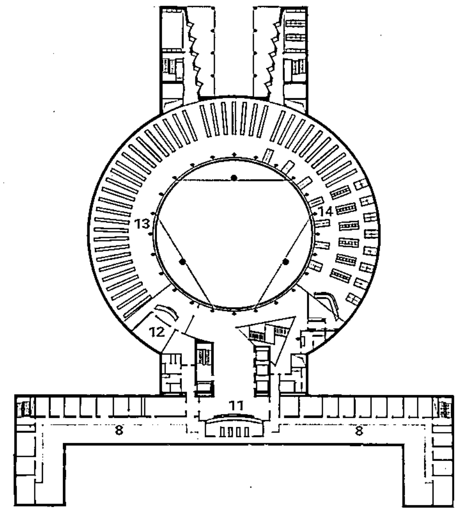
As the adjacent science quadrangle develops over the next decade, the Science Library's value will undoubtedly rise, confirming Stirling and Wilford's basic conviction that a building can be bold, risky, theatrical, and enrich its surroundings.—*David Dillon*

SCIENCE LIBRARY
UNIVERSITY OF CALIFORNIA AT IRVINE
IRVINE, CALIFORNIA

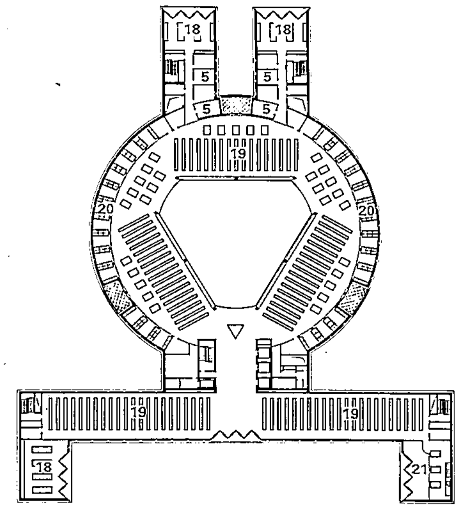
ARCHITECT: James Stirling Michael Wilford and Associates, London, England—James Stirling, Michael Wilford, Paul Barke, Chris Chong, Felim Dunne, Eilis O'Donnell, Richard Portchmouth, Andrew Pryke, Peter Ray, Mike Russum (project team)
ASSOCIATE ARCHITECT: IBI Group/L. Paul Zajfen, Irvine—L. Paul Zajfen, Travis Culwell, Paul de Jong, Barbara Helton-Berg, Ken Hetherington, Michael Levendusky, Will Longyear, Buddy Mear, Rick Norquist, Mark Tannin, Katherine Ware, Lewis Wood (project team)
LANDSCAPE ARCHITECT: Burton and Spitz
ENGINEERS: Ove Arup and Partners (structural/mechanical/electrical/acoustics); Hall & Foreman (civil)
CONSULTANTS: Adamson Associates (cost estimating); Nancy McAdams (library); Rolf Jensen & Associates (fire protection and codes)
GENERAL CONTRACTOR: McCarthy Western Constructors
COST: $25 million
PHOTOGRAPHER: Richard Bryant/Arcaid



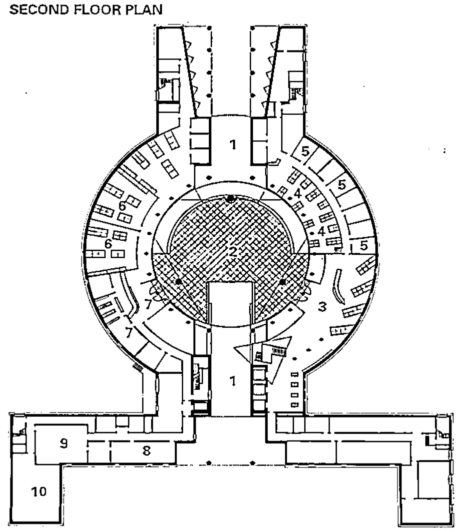
SITE PLAN 100'/30m



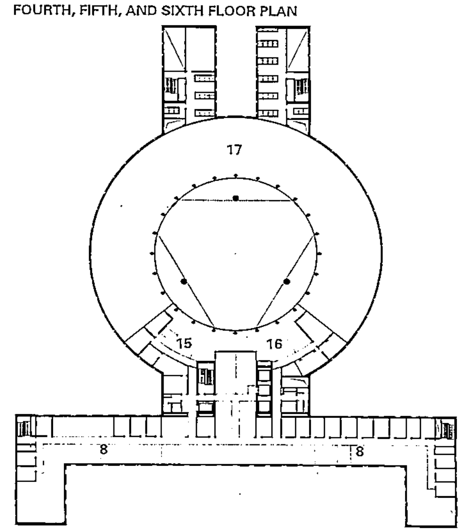
SECOND FLOOR PLAN



FOURTH, FIFTH, AND SIXTH FLOOR PLAN



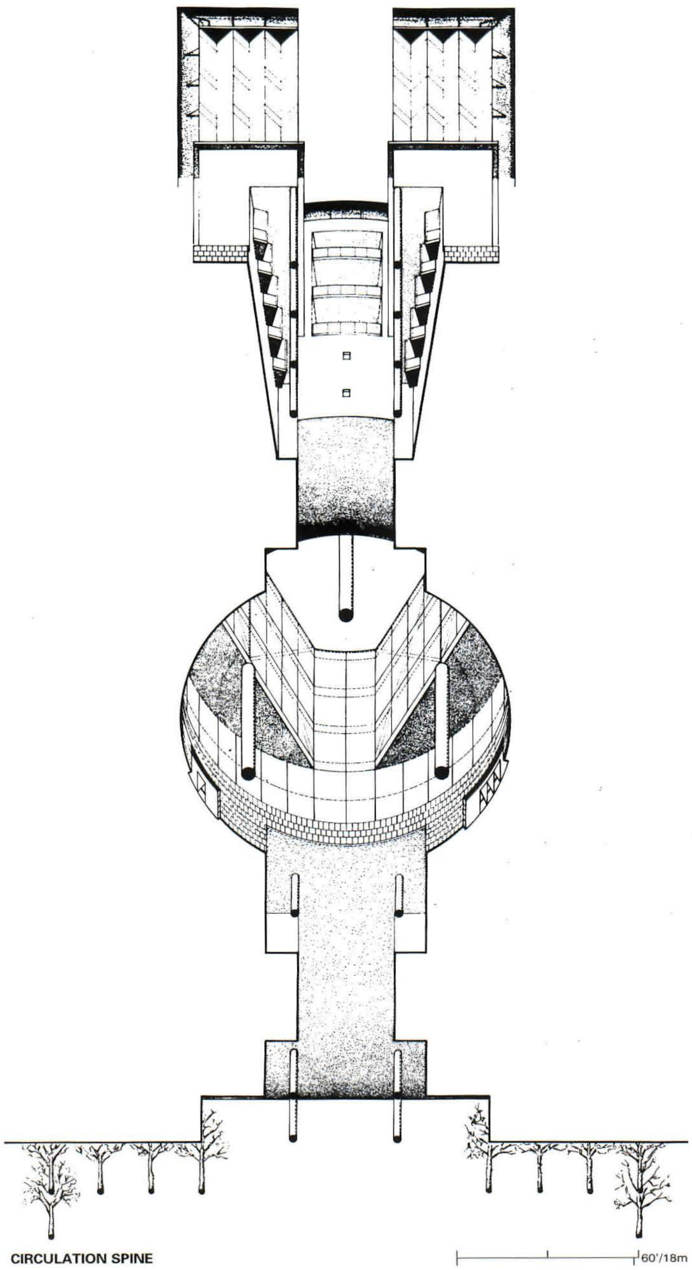
FIRST FLOOR PLAN



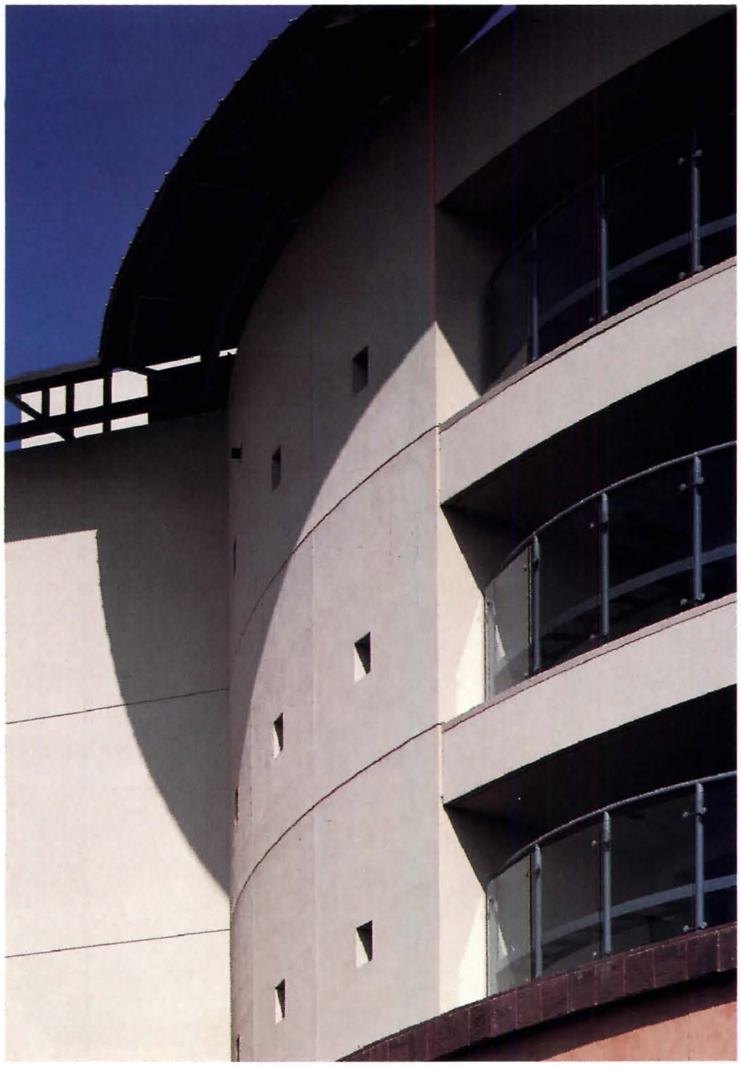
THIRD FLOOR PLAN 60'/18m

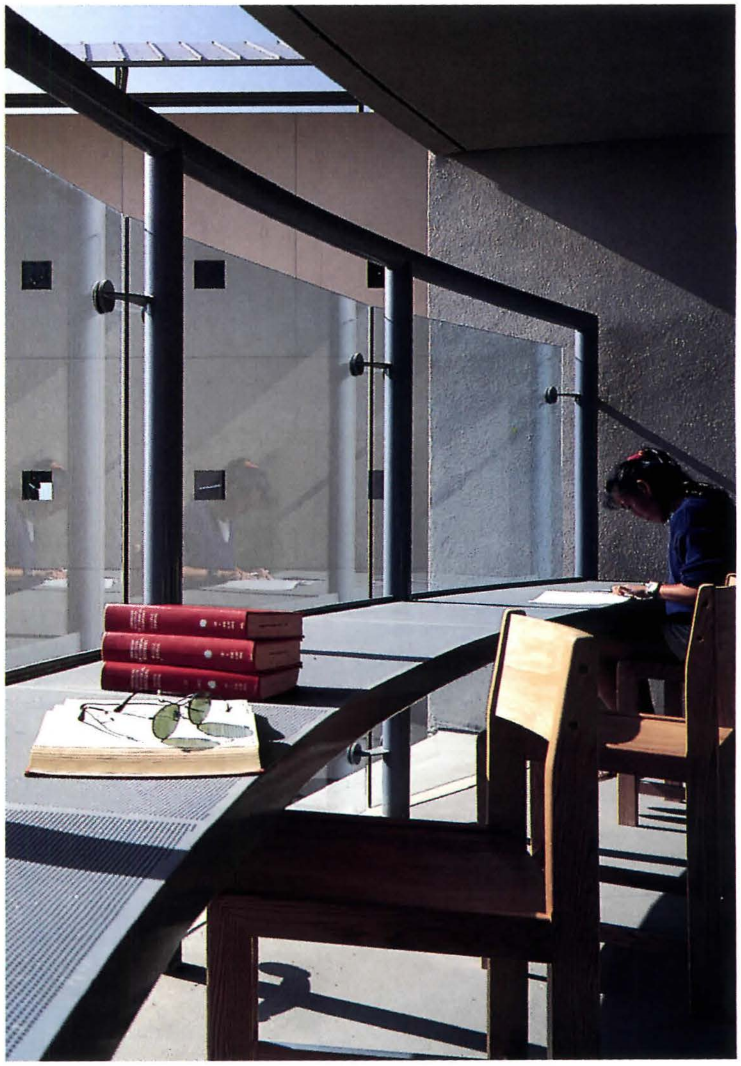
SITE PLAN: Stirling and Wilford's library lies east of existing and west of proposed science buildings, making it the hub. PLANS: Entry level contains catalog, computer lab, and study area. Second level houses periodical room, reference desk, and stacks. Stacks on upper floors line triangular courtyard.

1 BREEZEWAY
2 COURTYARD
3 ENTRANCE
4 24-HOUR STUDY ROOM
5 GROUP STUDY ROOM
6 COMPUTER ROOM
7 SELF-ACCESS LEARNING RESOURCE CENTER
8 OFFICE
9 CONFERENCE ROOM
10 BOOK STORAGE
11 CIRCULATION DESK
12 MICROFORM
13 PERIODICALS
14 REFERENCE
15 PRESERVATION DEPARTMENT
16 TECHNICAL SERVICES
17 OPEN TO BELOW
18 READING ROOM
19 STACKS
20 STUDY CARRELS
21 GRADUATE ROOM

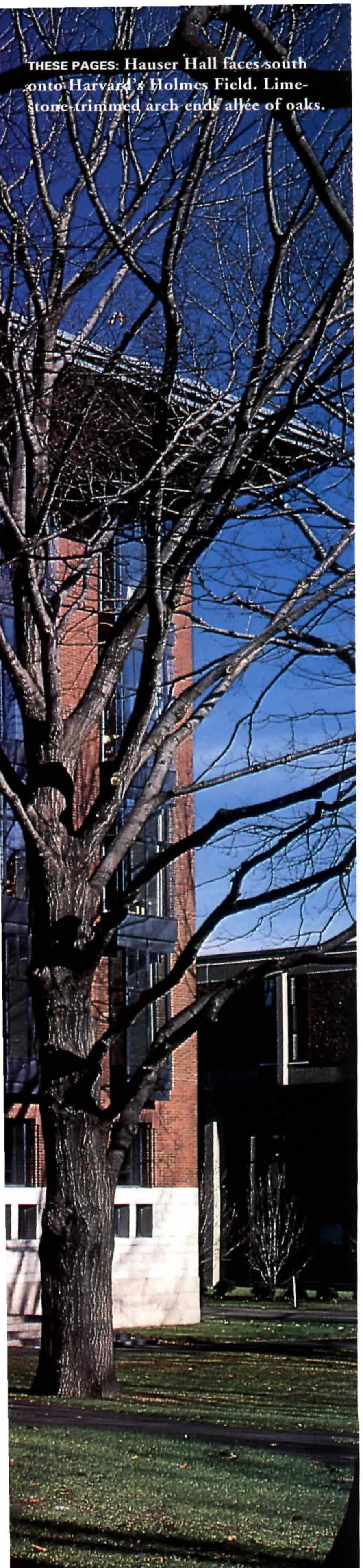


FACING PAGE: Visitors enter library through open courtyard, paved in red Indian sandstone. Exterior's solidity gives way to crystalline shapes inside.
DRAWING: Worm's-eye view of library shows six-story geometric interplay of circular and triangular forms around breezeway and central courtyard.
ABOVE: Dramatic two-story reading room, filled with Stirling's brashly painted columns, occupies most of second level.





ABOVE LEFT: Library building is faced in acrylic stucco, with sandstone string course and sloping metal roof to conceal mechanical equipment.
ABOVE RIGHT: Study carrels are located on perimeter walls near windows.
FACING PAGE: Graduate reading room on fourth level is one of several two-story study areas in library.



THESE PAGES: Hauser Hall faces south onto Harvard's Holmes Field. Limestone-trimmed arch ends allée of oaks.

Campus Justice

Hauser Hall
Harvard Law School
Cambridge, Massachusetts
Kallmann McKinnell & Wood Architects

The first building for Harvard University's School of Law, Austin Hall of 1884, was wrought by architect H. H. Richardson with an authority that has shaped the school's image ever since. Hauser Hall, the law school's new classroom and office building designed by Kallmann McKinnell & Wood Architects (KMW), engages its context without directly quoting its predecessor, proudly asserting its modernity as it strengthens the identity created by Richardson.

Hauser Hall terminates the north end of Harvard's Holmes Field, a spacious, tree-lined quadrangle surrounded by a dour group of classroom buildings. Behind Hauser stands Walter Gropius's Harkness Commons Graduate Center (1950), a fluid composition of shifting planes that formerly presented an unceremonious elevation to the quadrangle's mature allée of oaks.

KMW was thus challenged to mediate between the axial, urbane order of Holmes Field and the informal arrangement of Gropius's complex. The compact massing of Hauser Hall clearly addresses both conditions. At the front of the new law building, a bar-shaped frontispiece of offices and seminar rooms squarely faces south onto the allée. At the rear, Hauser defers to the Harkness Center's fluid spaces and floating facades: the architects located north-facing lecture rooms and offices in a semicircular volume that makes the building seem more like an object in Holmes Field than a static backdrop or boundary to Harkness Commons.

The arch at Hauser Hall's main entrance corresponds to the central axis of the quadrangle and clearly recalls Richardson's Austin Hall. But whereas Richardson's volumes are monolithic and swelling, with rooms and stairs bulging out from a continuous and taut masonry wrapper, KMW housed Hauser's classrooms and offices within distinct blocks. Expressing the new building's monumental staircase as a projection from the facade, for example, seemed too picturesque for KMW. So the architects only flirted with the idea by revealing its form behind the crisp frame of the entrance arch.

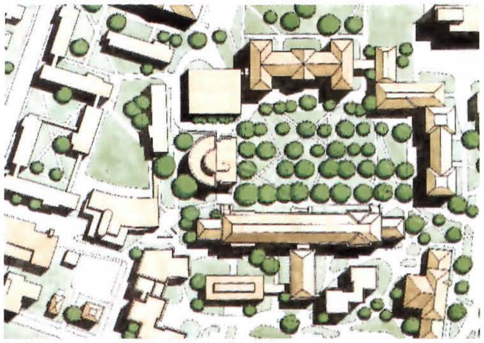
The asymmetrical balance of Hauser's south front, the symmetrical severity of its back, and the attenuated proportions of its windows evoke broad, if more subtle, influences, from the Glasgow School of Art by Charles Rennie MacIntosh to various cylindrical forms by Mario Botta. And Hauser's stacked, south-facing bay windows, while inspired by the tall, metal-framed windows on neighboring Langdell Hall, suggest the light industrial esthetic of Gropius's Harkness Commons: Each bay forms a transparent, skeletal pilaster, as if to support the projecting cornice at the top of the wall.

KMW articulated the south wall itself as a flat plane, its rock base sheared smooth to contrast the stone's rough face on the rest of the building and to evoke the planarity of Gropius's facades. The north-facing volume is more dense and plastic, with corbeled brick cornices, radius brick window jambs, and cast-stone spring blocks for lintels.

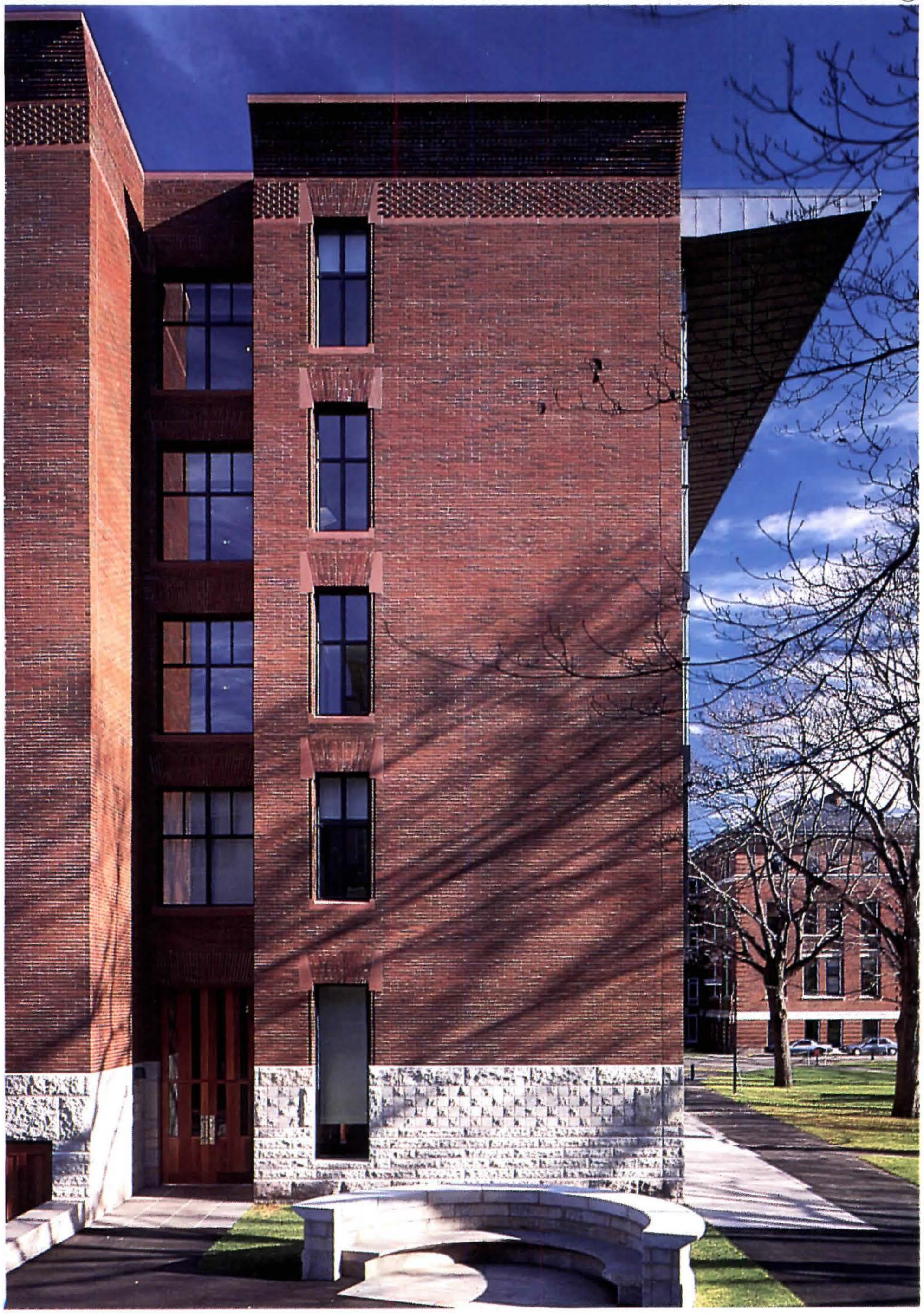
Hauser Hall's interiors lack the richness of its exterior. The entrance lobby, with its acoustical-tiled ceiling and facile floor pattern, is the least compelling space in the building. Lecture halls and seminar rooms are more successful—airy and daylit, with fabric-covered walls to diffuse sound. Most elegant are south-facing faculty offices, where cherry shelves line the walls and floor-to-ceiling glass bays reach into the treetops.

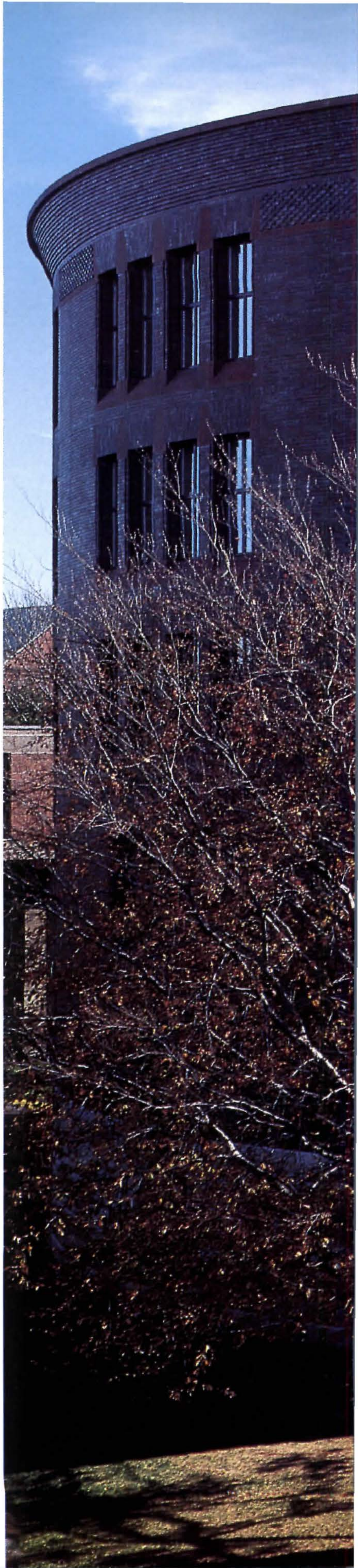
Hauser Hall succeeds, like most of KMW's buildings, by the craft and substance of its details. Its confident eclecticism is a favorable departure from the self-conscious contextualism of the architect's first building at Harvard, Shad Hall (1989). Shad's white-painted window muntins and fussy red-brick cornices seem more like an abstract conciliation to its Georgian neighbor than a self-confident reinterpretation. At Hauser Hall, Kallmann McKinnell & Wood more boldly appropriates Harvard's architectural tradition without sacrificing invention.—*M. Lindsay Bierman*

FACING PAGE: Hauser's rear volume suggests an amphitheater. Kallmann McKinnell & Wood designed limestone and granite base and brick cornice to recall H. H. Richardson's Austin Hall.
BELOW: Radius brick, cast-stone spring blocks, and cast-stone sills frame windows. Projecting cornice (right) is sheathed in lead-coated copper.
SITE PLAN: Hauser Hall occupies north end of Holmes Field, between Gropius's Harkness Commons (far left, center) and Austin Hall (far right, bottom).



SITE PLAN 120'/36m



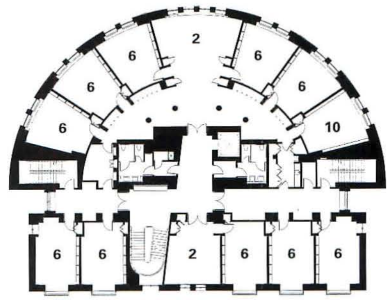


1 COMPUTER LAB
2 ADMINISTRATIVE OFFICE
3 LOBBY
4 SEMINAR ROOM
5 LECTURE HALL
6 FACULTY OFFICE
7 FACULTY LOUNGE
8 MECHANICAL
9 OPEN TO BELOW
10 CONFERENCE ROOM

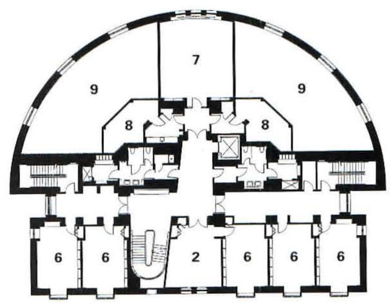
PLANS: Central lobby and corridors separate south-facing faculty and seminar rooms (bottom) from north-facing lecture rooms and offices (top).
BELOW: Architects conceived steel lighting cove above faculty office bookshelves to echo building's south cornice.
CENTER: Cherry wainscoting and patterned granite floors adorn lobby.
BOTTOM: KMW designed open staircase to encourage student-faculty interaction.
FACING PAGE: Writing surfaces in lecture hall incorporate outlets for computers.

HAUSER HALL
HARVARD LAW SCHOOL
CAMBRIDGE, MASSACHUSETTS

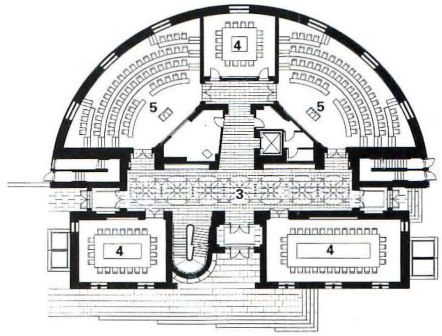
ARCHITECT: Kallmann McKinnell & Wood Architects, Boston—Gerhard Kallmann, Michael McKinnell, Henry Wood (principals-in-charge); Theodore Szostkowski (principal/project architect); Ron Steffek (project manager); Vincent Cortina, Peter Bacot, Katie Logue, Beth Masucci-Newman, Tom Robinson, Bill White, Randy Wilmont, Beth Worrell, Ato Apiafi (project team); Bruce Wood, Ken Hartfiel (landscape); Bruce Harvey, Mark Osterman (3-D studies)
ENGINEERS: Weidlinger Associates (structural); TMP (mechanical/fire protection); Lottero & Mason Associates (electrical); Bryant Associates (civil); Haley & Aldrich (geotechnical)
CONSULTANTS: Stephanie Mallis (interiors); Cambridge Acoustical Associates (acoustics); Berg-Howland Associates (lighting); Dædalus Projects (cost estimator); Todisco Associates (specifications); Fire Consulting Associates (fire code); Boyce-Nemec Designs (audiovisual)
CONSTRUCTION MANAGER: Daniel O' Connell's Sons
COST: Withheld at owner's request
PHOTOGRAPHER: Richard Mandelkorn



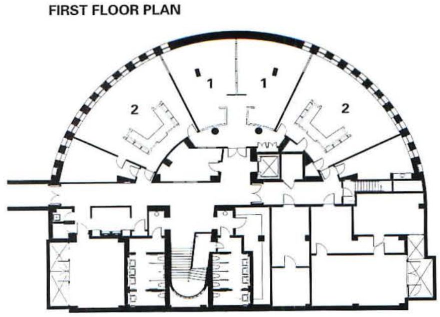
THIRD, FOURTH, AND FIFTH FLOOR PLAN



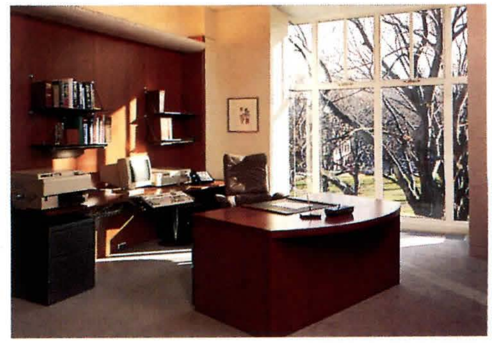
SECOND FLOOR PLAN

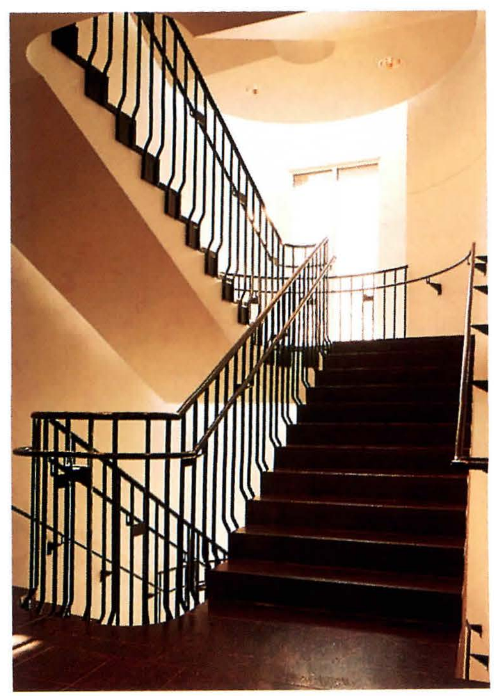


FIRST FLOOR PLAN



BASEMENT PLAN 20'/6m





Scientific Community

Physics and Astronomy Building
University of Washington
Seattle, Washington
Cesar Pelli & Associates

To craft a building in harmony with the University of Washington campus, Cesar Pelli could have gone Gothic. The 34,000-student institution may be a public university, but its Gothic-style buildings recall a private Eastern college. Buildings such as Carl Gould's 1926 Suzzallo Library and John Graham's 1928 Physics Hall are arranged around quads that have more in common with Princeton or Yale than with West Coast campuses such as UCLA. So why should Pelli's vaguely Deco, slightly 1950s physics and astronomy complex fit this campus like a glove?

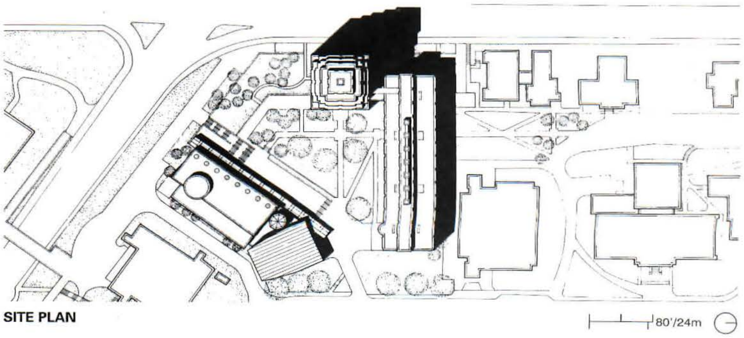
Perhaps because Pelli's strategy for accommodating 265,000 square feet of laboratories and lecture halls defers to a more eternal set of architectural ideas than mere style. Without resorting to Gothic appliqué, Pelli has imbued his three-building complex with materials, coloration, patterns, and scale that peacefully coexist with the prominent older quads of the campus.

The complex is located at the junction of three important campus thoroughfares: Pacific Street, 15th Avenue, and Thurston Lane, a walkway. Due south of the complex and across Pacific lie the university's marine and health sciences campuses. Eventually, a pedestrian bridge will extend Thurston Lane, reaching from Physics and Astronomy's courtyard across Pacific Street, connecting the sciences.

To conform to the university's scale, Pelli divided the physics and astronomy complex programmatically into three volumes that embrace a courtyard. A two-story auditorium building holds lecture halls, classrooms, and a 30-seat planetarium; an eight-story "tower" houses faculty offices and a library; and a long, four-story bar contains physics labs and classrooms. To accommodate the required square footage of laboratories without adding to the scale of the buildings, Pelli located 83,000 square feet of laboratories underground.

THESE PAGES: Cesar Pelli's new Physics and Astronomy complex occupies a corner at the intersection of 15th Avenue and Pacific Street. Northernmost volume (facing page, far left) houses physics labs and classrooms. Tower accommodates faculty and administration offices. Low building with colonnade (below) houses lecture halls, with round, brick-clad planetarium on top.

ABOVE: Bar-shaped wing holds classrooms and laboratories. Copper cornice houses mechanical equipment.
FACING PAGE, FAR LEFT: Stair descends from courtyard to pedestrian crossing of Pacific Street. Eventually, a bridge will traverse this street, linking complex with marine and health sciences campuses to the south.
FACING PAGE, LEFT: Cross-courtyard walkway extends an important campus lane. Concrete-columned colonnade provides protection from inclement weather.
SITE PLAN: Courtyard is enclosed by classroom bar (right), office tower, and auditorium building (left).



SITE PLAN

Working with associate architect NBBJ, Pelli clad the buildings in a tweedy pattern of ochre-colored bricks that echoes existing campus buildings without direct mimicry. Rose-beige, limestonelike precast pilasters and lintels clearly identify the complex as part of the University of Washington.

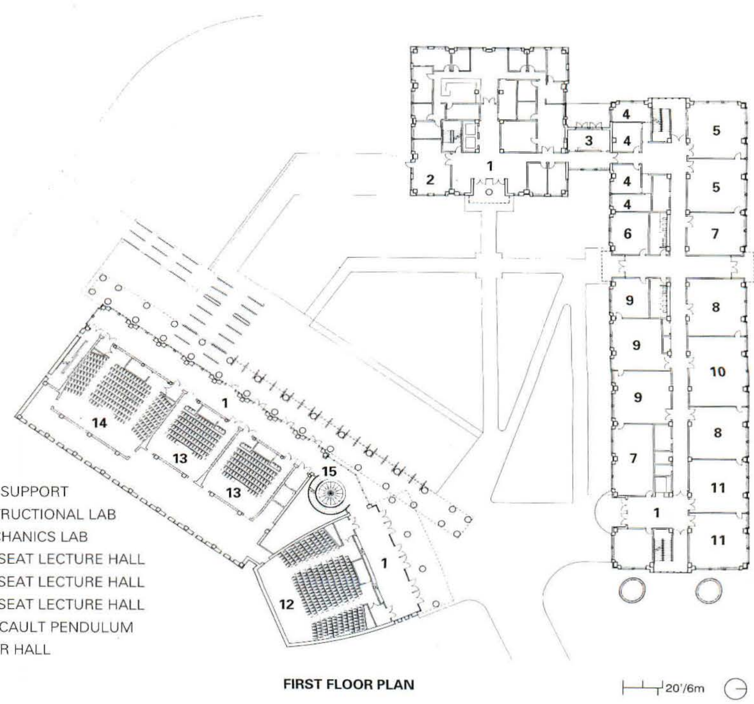
Pelli is no stranger to fashioning campus connections. When designing the Boyer Center for Molecular Medicine in 1992, the architect convinced Yale Medical School to move the building's site to encourage interaction among the sciences. When siting Rice University's 1984 Herring Hall, his attention to location was so meticulous that college trustees commissioned Pelli to prepare a master plan for future growth.

An unwritten objective of campus design, Pelli believes, is to create places that facilitate the exchange of ideas. "In a good intellectual setting, one can learn more from classmates than from classes," he asserts. Therefore, Pelli strives for forms to which people "instinctively or atavistically" respond.

At the Physics and Astronomy complex, for example, these forms include a copper-roofed colonnade that provides cover during a drizzle. A glass-domed circular stair in the auditorium building offers space for conversation. Across the courtyard, a coffee shop on the first floor of the tower spills out onto a patio. Chalkboards line the stairwells to encourage impromptu learning sessions.

However, Pelli's bias toward informal learning had one unfortunate consequence: Seats in the four lecture halls are arranged so closely that professors are wary of giving exams in these rooms. "I use the new halls," notes Physics Professor James B. Gerhart, "but I am forced to give each class three different tests" to discourage copying. Other professors are pleased with the complex, however, particularly its unusual spaces. According to Astronomy Professor Donald Brownlee, students

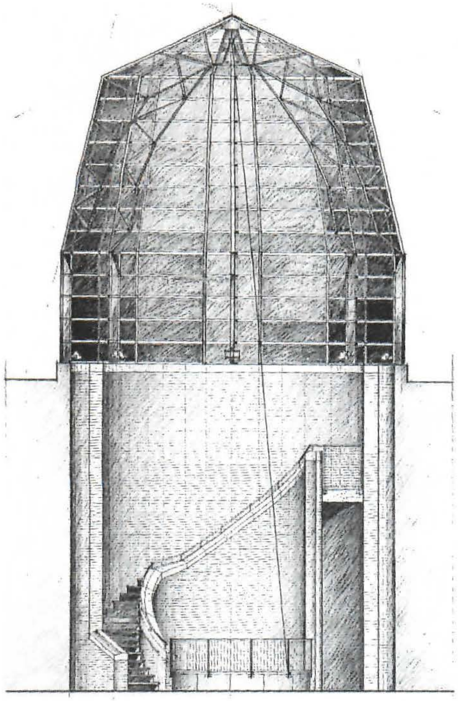
RANDALL J. CORCORAN PHOTOS



1 LOBBY
2 CAFÉ
3 STUDENT CENTER
4 OFFICE
5 ELECTRICITY LAB
6 MUSIC LAB
7 CLASSROOM
8 OPTICS LAB
9 LAB SUPPORT
10 INSTRUCTIONAL LAB
11 MECHANICS LAB
12 250-SEAT LECTURE HALL
13 100-SEAT LECTURE HALL
14 200-SEAT LECTURE HALL
15 FOUCAULT PENDULUM STAIR HALL

FIRST FLOOR PLAN

FACING PAGE: According to Pelli, copper top of office tower is designed to lift the eye skyward, achieving the effect of Gothic architecture with contemporary forms. Glass connector (right) leads to classroom wing.
TOP RIGHT: Copper-topped canopy extends from foyer of auditorium building, creating an outdoor lobby.
ABOVE RIGHT: Thirty-five-foot-high sundial on southern facade of auditorium/astronomy building was designed by Astronomy Professor Woodruff Sullivan.
PLAN: Office tower and physics wing are linked by a four-story glass connector. Auditorium building is a free-standing volume across the courtyard.



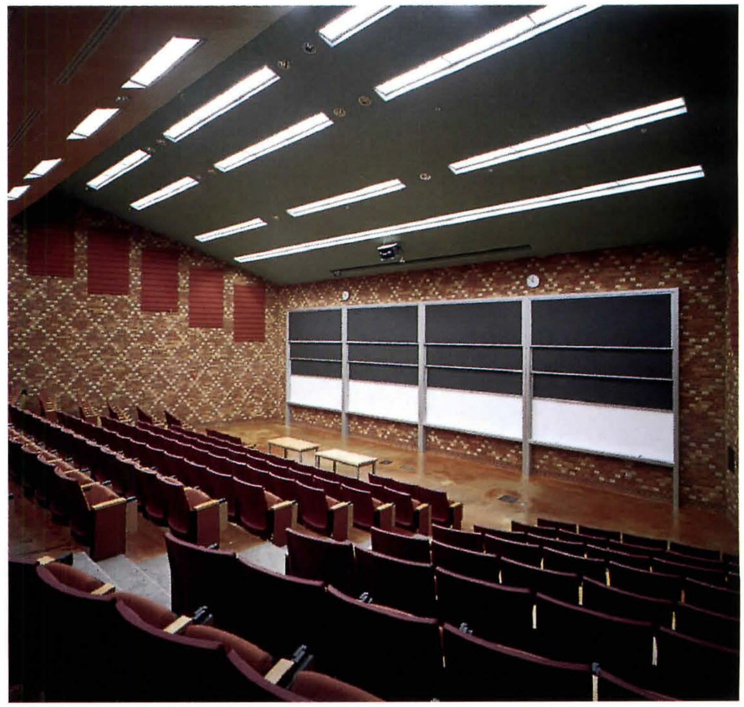
STAIRWELL SECTION 5'/1.5m

FACING PAGE: Slate floors and patterned brick walls lend elegance to foyer of auditorium building. Circular stair offers view of Foucault pendulum.
SECTION: Glass dome is supported by open-web steel trusses. Mechanism at apex drives pendulum.
ABOVE: Rotating ladder inside glass dome allows access to mechanism at apex. Ladder rotates on a track.
TOP RIGHT: Similar ladder rotates around outside of glass dome for cleaning. Glass is fritted to filter light.
RIGHT: In foyer of large auditorium building, windows punctuate brick pattern, which is carried from outside.

entering the new teaching planetarium "feel like they're stepping onto the command deck of the *Starship Enterprise*."

Indeed, Pelli has imbued the buildings with details to inspire any student of science. The glass-domed stair houses a Foucault pendulum demonstrating the Earth's rotation; fritted glass in the physics wing displays a crystalline pattern; and tiled floors depict the superimposition of carbon atoms with hydrogen atoms. Precast pilasters are engraved with physics formulas, and the auditorium building's southern facade bears a sundial. "When designing a place for people who are 19 or 20, you have to give them a place to hang their emotional hats," Pelli confides.

Such attention to detail affords students a sense of belonging to a select group, one that possesses a certain knowledge not available to outsiders. Architecture that offers symbols of this specialness and places to share it is indeed inspirational. After all, students don't mind their close proximity in the lecture halls one bit.—*Heidi Landecker*



TOP RIGHT: Brick pattern of exteriors is repeated inside auditorium building's largest lecture hall.
RIGHT: Pattern on vaulted ceiling of reading room in library was designed by Pelli.
FACING PAGE: Balconies (left) outside astronomy classrooms and planetarium overlook slate-floored corridor of auditorium building. At end of hallway, windows provide views of southwestern campus.

PHYSICS AND ASTRONOMY BUILDING
UNIVERSITY OF WASHINGTON, SEATTLE

ARCHITECT: Cesar Pelli & Associates, New Haven—Cesar Pelli (design principal); Kristin Hawkins, Kevin Hart (design team leaders); Mihaly Turbucz (senior designer); J. Bunton, Robert Taylor, David Toti, Isaac Campbell, Hirotaka Kataoka (design team)
ASSOCIATE ARCHITECT: NBBJ, Seattle—David Hoedemaker (principal-in-charge); Dennis Forsyth (project manager); Tony Stewart (project architect/construction administration); Brad Leathley (lead laboratory planner)
LANDSCAPE ARCHITECT: Murase Associates
ENGINEERS: Skilling Ward Magnusson Barkshire (structural); Gayner Engineers (mechanical); Abacus (electrical)
CONSULTANTS: Colin Gordin and Associates, Michael R. Yantis Associates (acoustics); Cline Bettridge Bernstein Lighting Design (lighting)
GENERAL CONTRACTOR: M.A. Mortenson
COST: \$47.5 million
PHOTOGRAPHER: Timothy Hursley, except as noted


S. Stauffer

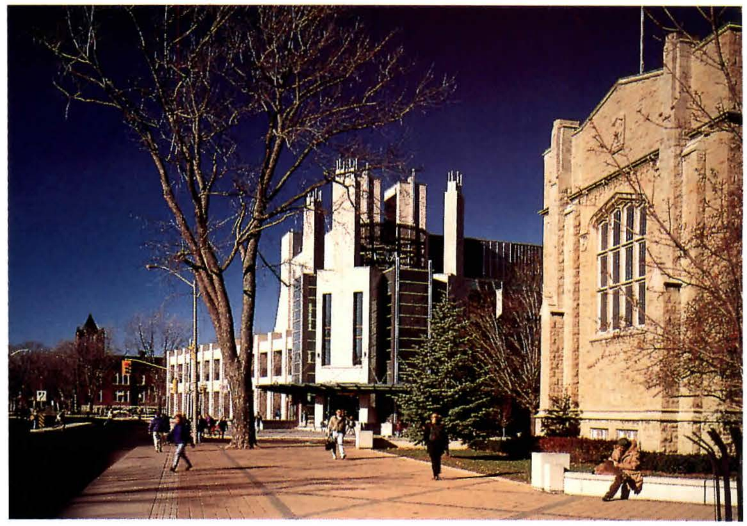
Gothic Humanism

Joseph S. Stauffer Library
Queen's University
Kingston, Ontario
Kuwabara Payne McKenna Blumberg, Architect

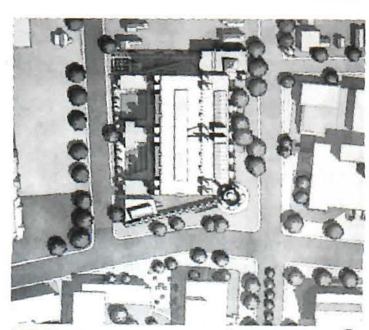
The Joseph S. Stauffer Library, located at Queen's University in Kingston, Ontario, was once a British garrison and is still mighty proud of its history and heritage. When Leon Krier turned up at Queen's a few years back to preach the gospel of Prince Charles, he drew a crowd of enthusiasts. So it was hardly surprising that Kuwabara Payne McKenna Blumberg (KPMB), one of six firms invited to compete for the university library, went Gothic to harmonize with the look of the rest of the campus, which mainly dates from the early 1920s. Robustly detailed and rich of silhouette, the library occupies a prominent site on the northwest corner of the campus's main crossroads as though it's been there a while. Locals call it New Old, which project architect Thomas Payne considers a compliment.

The new is detected in the teak-clad mahogany windows. The library is clad alternately in mechanically split limestone—an allusion to Kingston's fine 19th-century architectural stock—and glass curtain wall to form sharply articulated bays in the spirit of the English Perpendicular. Its many finials are of precast concrete incised by strips of aluminum. Besides this general play with verticals, Gothic traces include towers, an arcade, and mechanical ducts contained within the shape of buttresses. They succeed by virtue of abstraction.

The building is set right on the ground, establishing accessibility as a keynote. Two sets of doors lead into the entrance tower, the larger of two turrets. A suspended metal canopy extends through the lobby, partly a bus shelter, into an atrium that welcomes students to the workings of bibliography and scholarship. Payne didn't want any one space to organize the entire building, so he designed an atrium that, while a source of light, clarity, and views, is neither overwhelming nor vacuous. Circulation, catalogs, and current periodicals are the matter at hand. A sense of what's in store on the upper levels is provided by the unfettered view of four floors



FACING PAGE: Split-faced, limestone-clad piers and chimneys topped by aluminum finials encircle ground-floor entrance and upper level fireplace reading room.
TOP: Stauffer Library harmonizes with its collegiate Gothic neighbors without resorting to mimicry of them.
ABOVE: Chimneylike bays function as buttresses that enclose mechanical systems.
SITE PLAN: Stauffer Library is located at the intersection of Union and University streets, the campus's main crossroads.



SITE PLAN 100'/30m

centered by the collection, housed in a loft-like core with an astonishing variety of reading stations located along the perimeter.

Since so much of the library's structure is exposed concrete, cherry wood was abundantly applied for warmth as much as sturdiness. Some of the most appealing spaces are those that are plain and to the point, such as the linoleum-floored stacks. An elevator stops at each floor without Gothic ceremony.

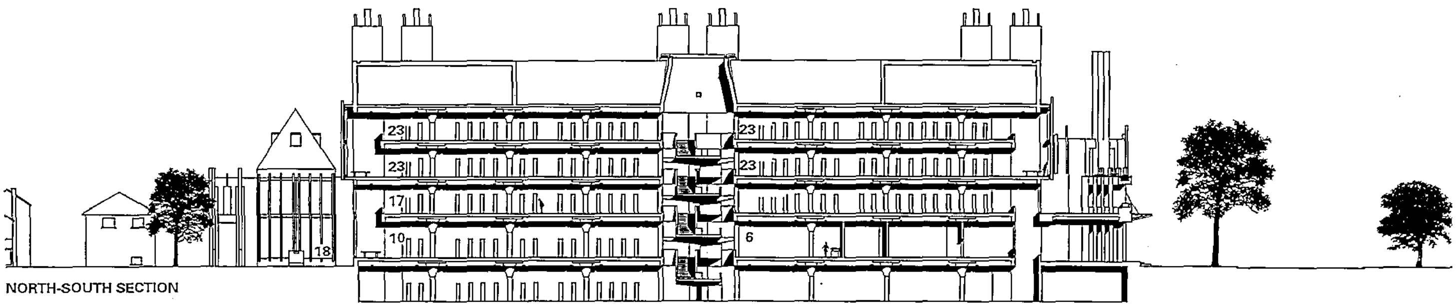
KPMB took the opportunity to soar, principally in designing the Fireplace Reading Room located in the entrance turret, above the foyer. The grandest of four reading rooms, it exudes a clubby atmosphere, thanks in part to three stone fireplaces. A reception venue waiting to happen, the room is connected to a triangular outdoor terrace originally intended as a sculpture garden but now a plaza for pigeons. Also omitted was a series of study pavilions interleaved with gardens on the west side of the library: It was feared the plots would encourage unwelcome visitors.

Yet bookworms are entirely welcome. Though every floor of stacks shares the same plan, there are as many study arrangements as there are ways to study, short of sprawling on the floor with a sandwich. They include individual carrels; banked carrels; study tables in twos, fours, and sixes; group study rooms; even a special, cone-ceilinged study tower. Some carrels overlook the atrium while others offer views to the outside. Two rather somber, interconnected reading rooms are bounded by tall translucent glass screens meant to give "an illusion of infinite space," in Payne's words. The Graduate Reading Room has a pyramidal ceiling of a lilac hue, one facet of a color scheme derived from the Queen's tricolor—red, blue, yellow—that threads through the building.

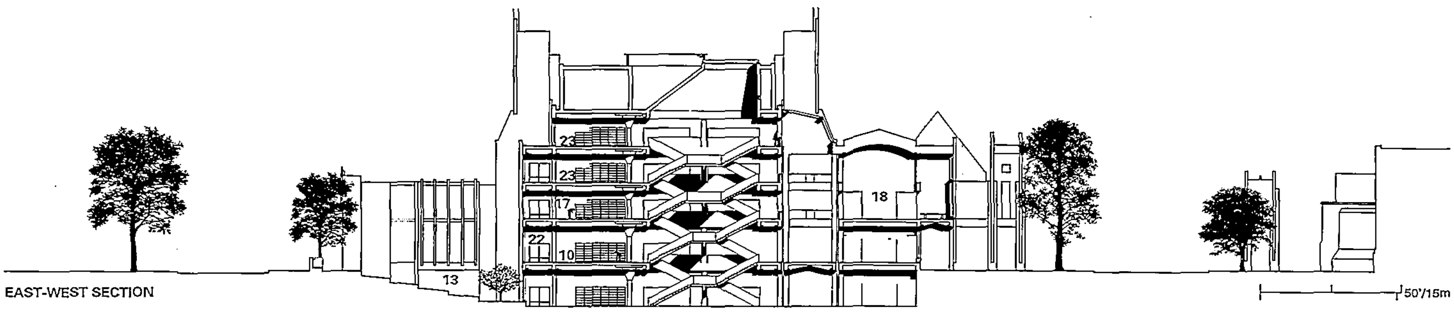
There are no hidden corners in this 225,000-square-foot building. Locating the mechanical system outside the main frame of the building and using a heating system of radiant ceiling panels helped free up space. Payne did the rest by establishing sight lines

TOP: Turning a courtyard scheme inside-out, stone-faced service buttresses and glazed reading rooms wrap library's stacks.
ABOVE LEFT: Outdoor terrace spans limestone-clad entrance loggia.
ABOVE RIGHT: Plaster vaults adorn interior of east-facing arcade.
FACING PAGE, TOP: Loggia and service buttresses punctuate south facade.
FACING PAGE BOTTOM: Study bays and curtain wall of graduate reading room anchor north end of east facade.


EXIT
EXIT

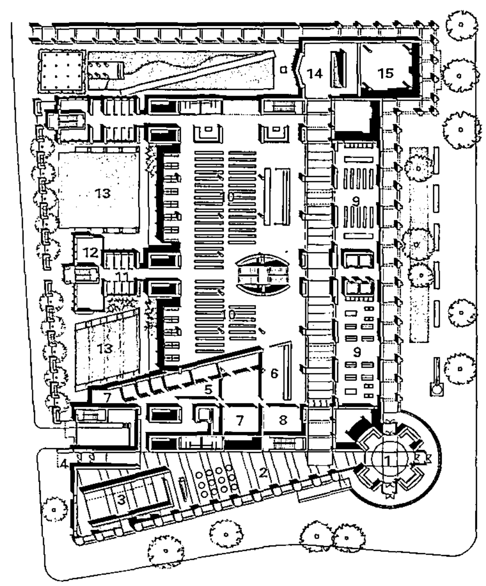


NORTH-SOUTH SECTION

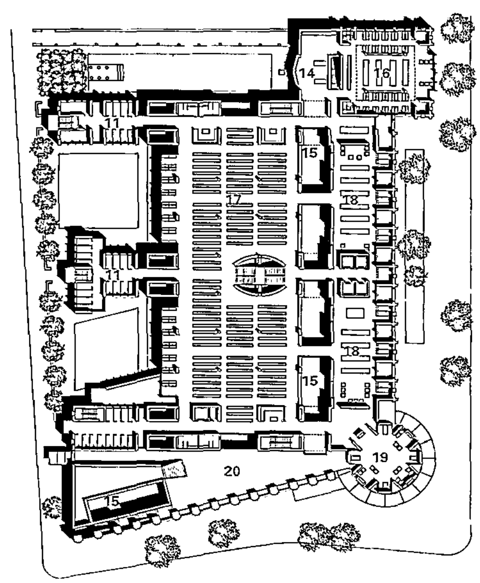


EAST-WEST SECTION

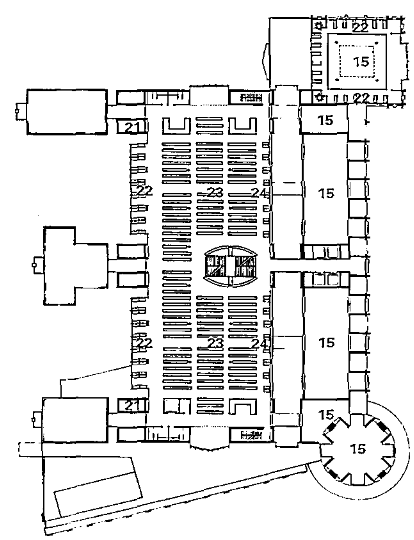
50'/15m



FIRST FLOOR PLAN



SECOND FLOOR PLAN



THIRD FLOOR PLAN

50'/15m

1 ENTRANCE
2 LOBBY/CAFÉ
3 ART GALLERY
4 STAFF ENTRANCE
5 ADMINISTRATION
6 CIRCULATION
7 STAFF MEETING ROOM
8 COLLECTION DEVELOPMENT
9 CURRENT PERIODICALS
10 INFORMATION/REFERENCE
11 INDIVIDUAL STUDY
12 TEACHING SEMINAR ROOM
13 GARDEN
14 LOUNGE
15 OPEN TO BELOW
16 GRADUATE READING ROOM
17 BOUND PERIODICALS COLLECTION
18 GARDEN READING ROOM
19 FIREPLACE READING ROOM
20 SCULPTURE TERRACE
21 ELECTRICAL/DATA ROOM
22 STUDY CARRELS
23 MONOGRAPH COLLECTION
24 COMPUTERS

FACING PAGE TOP: Floors of fireplace reading room are finished in cherry wood.
FACING PAGE BOTTOM: Granite-floored entrance rotunda is furnished with built-in cherry wood seating.
PLANS AND SECTIONS: KPMB's original competition drawings show west-facing pavilions for future expansion and skylit staircase *penetrating* stacks. In final scheme, the architects shifted staircase eastward to center of atrium. Reading areas and public arcades face south and east onto adjoining streets.

in all directions. Though he feared sound might travel with similar liberty, the qualities of carpeting, wood, linoleum, and granite—even if not all sound-absorbent—make for soft and reassuring sounds.

The library is special not due to its historical references but to its imaginative synthesis of space, light, and purpose. When Payne lapsed into fashion, he renounced the line between thoughtfulness and stylishness that defines the building. His most flagrant flourish is the canopy over the main door, a glass-and-steel umbrella better suited to a boutique. Still, it detracts only slightly from the overall humanity of a library dedicated to the humanities. The Stauffer Library works as an addition to the campus skyline, a convivial study environment, and a repertoire of finely tuned details that makes a house of learning a home.—*Adele Freedman*

Adele Freedman is the architecture critic of the Globe and Mail *in Toronto.*

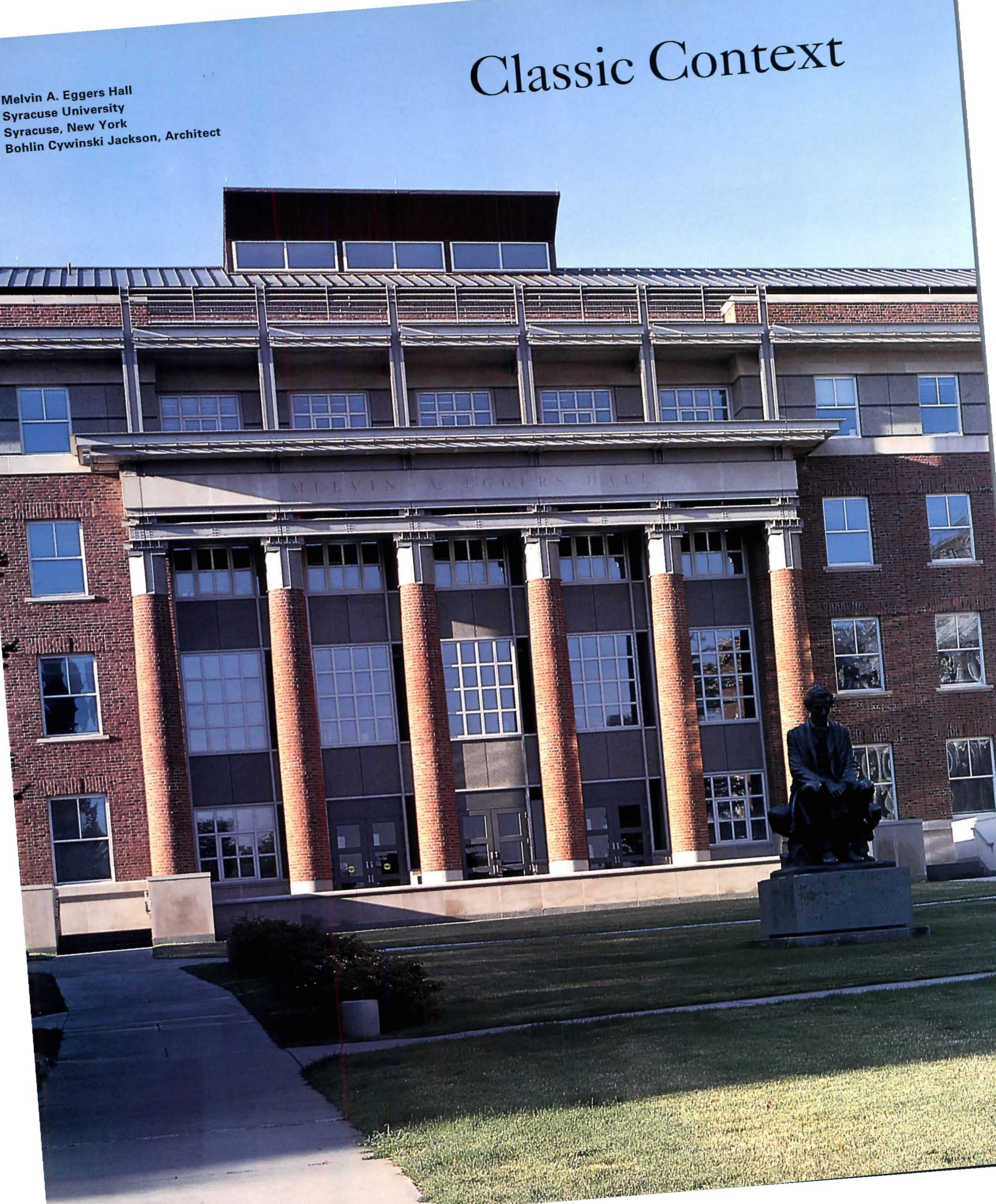
JOSEPH S. STAUFFER LIBRARY
QUEEN'S UNIVERSITY
KINGSTON, ONTARIO

ARCHITECT: Kuwabara Payne McKenna Blumberg Architects, Toronto, Ontario—Thomas Payne (principal-in-charge); Christopher Couse (associate-in-charge); David Pontarini (second associate); Victoria Gregory, Goran Milosevic, Judy Taylor (project architects); Fred Allin, Shirley Blumberg, Andrew Dyke, Shauna Gillies-Smith, Robert Gilvesy, Rick Hopkins, Lexi Kolt, Bruce Kuwabara, Kevin Mast, Marianne McKenna, Katherine Pankratz, Karen Petrachenko, Mike Poitras, Michael Taylor, Simon Taylor, Alan Vihant (project team)
CONSULTING ARCHITECT: Moffat Kinoshita Associates
LANDSCAPE ARCHITECT: Ferris & Quinn Associates
ENGINEERS: Robert Halsall & Associates (structural); JSA Energy Analysts (mechanical); Mulvey and Banani International (electrical)
CONSULTANTS: James F. Vermeulen Cost Consultant (cost); McAdams Planning Consultants (library); Leber/Rubes (fire and life safety)
GENERAL CONTRACTOR: Eastern Construction Company
COST: $21.6 million ($91 per sq. ft.)
PHOTOGRAPHER: *Jeff Goldberg/Esto*

ABOVE: Reading rooms culminate in perimeter clerestory (right) and perforated-steel vault. Space extends visually into translucent glass screen.
FACING PAGE: Suspended helical staircase with cherry wood picket balustrade leads to study carrels at perimeter of atrium.

Classic Context

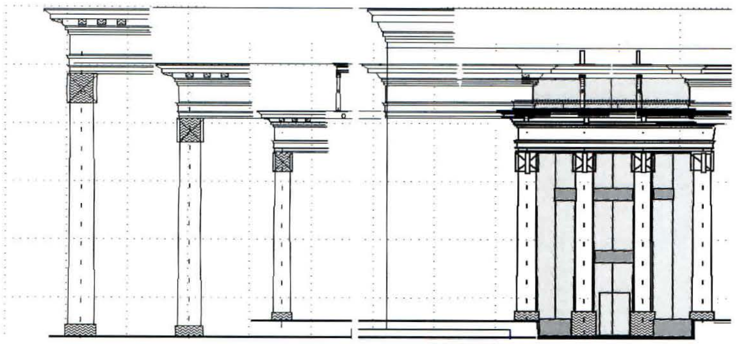
Melvin A. Eggers Hall
Syracuse University
Syracuse, New York
Bohlin Cywinski Jackson, Architect



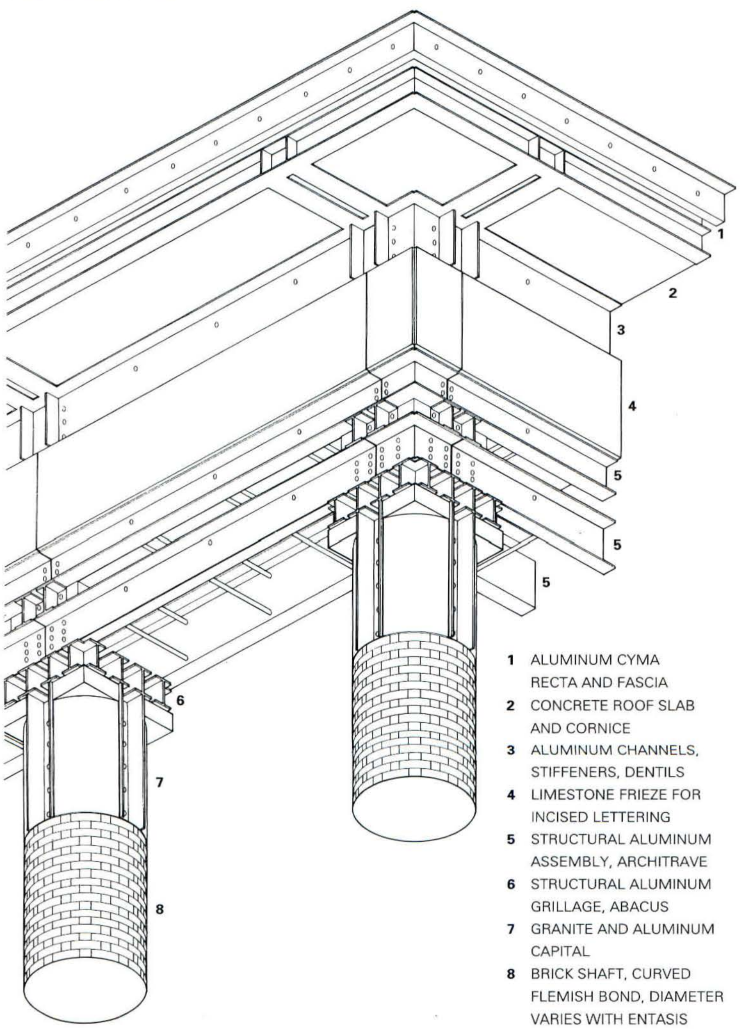
THESE PAGES: Bohlin Cywinski Jackson's Eggers Hall (facing page) is linked to the 64-year-old Maxwell Hall (below) to form a new campus green. New portico matches old in proportion, but not detail.

BELOW LEFT: Bohlin Cywinski Jackson used computer analysis to devise Eggers' new orders (right) from Maxwell's Corinthian columns (left).
BOTTOM LEFT: Eggers' column shafts are constructed of a concrete core faced in brick; their entasis was designed on computer. Capitals are proportionate to Maxwell's Corinthian order.
BELOW: Maxwell's columns rest on base.
BOTTOM: Eggers' columns rest on plinths. Steel columns support cornice.

FACING PAGE: Eggers faces new campus green flanked by Victorian Gothic administration building and Maxwell Hall.
PLANS: Eggers Hall (top) and Maxwell Hall (right) form new L-shaped complex. Offices comprise first and second floors, with shared interdisciplinary space on the second. Third and fourth floors serve graduate programs and research institutes. Fifth floor houses faculty offices.



PROPORTIONAL ANALYSIS



1 ALUMINUM CYMA RECTA AND FASCIA
2 CONCRETE ROOF SLAB AND CORNICE
3 ALUMINUM CHANNELS, STIFFENERS, DENTILS
4 LIMESTONE FRIEZE FOR INCISED LETTERING
5 STRUCTURAL ALUMINUM ASSEMBLY, ARCHITRAVE
6 STRUCTURAL ALUMINUM GRILLAGE, ABACUS
7 GRANITE AND ALUMINUM CAPITAL
8 BRICK SHAFT, CURVED FLEMISH BOND, DIAMETER VARIES WITH ENTASIS

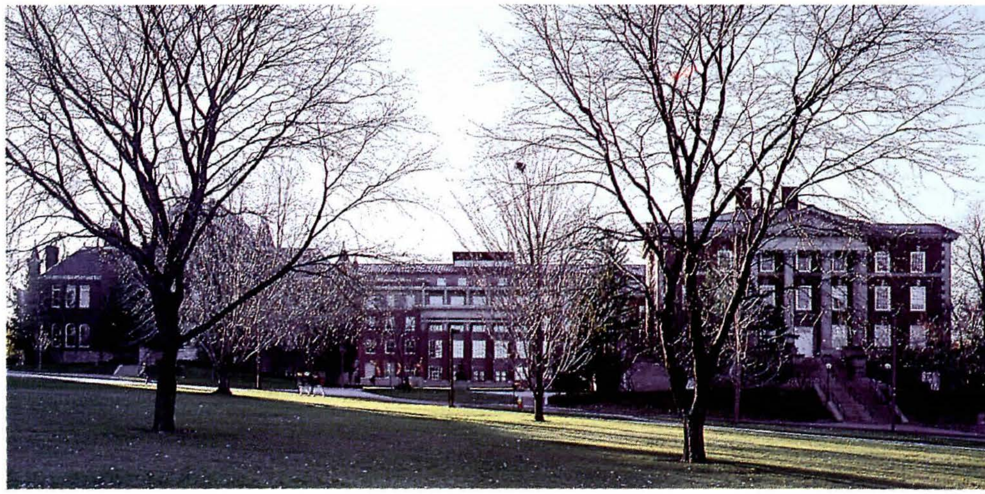
COLUMN AND ENTABLATURE ASSEMBLY

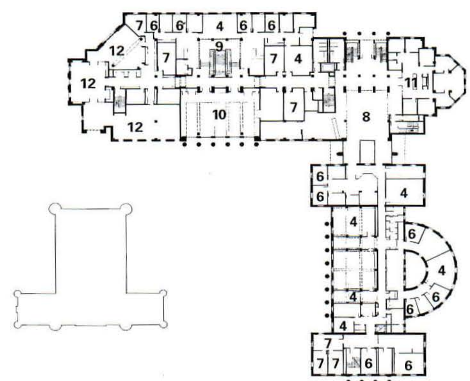
1 LOBBY
2 AUDITORIUM
3 CLASSROOM
4 SEMINAR ROOM
5 FOUNDER'S ROOM
6 FACULTY OFFICE
7 TEACHING BAY
8 COMMONS
9 ATRIUM
10 PUBLIC EVENTS ROOM
11 DEAN'S SUITE
12 ACADEMIC VILLAGE
13 CAFÉ
14 COMPUTER ROOM

With the recent completion of Melvin A. Eggers Hall, the social sciences, once taught in 10 buildings dispersed about the Syracuse University campus, have been brought together in one complex. Eggers Hall extends Maxwell Hall, a fine Georgian Colonial academic building of the early 1930s designed by John Russell Pope. The addition of a new wing to this outstanding campus landmark presented an architectural challenge not to be taken lightly. Further complicating the design task, and making it even more interesting, was the fact that the university and its architect, Bohlin Cywinski Jackson, intended the new building to strengthen what remains of the underlying Classical language of the 124-year-old Syracuse campus.

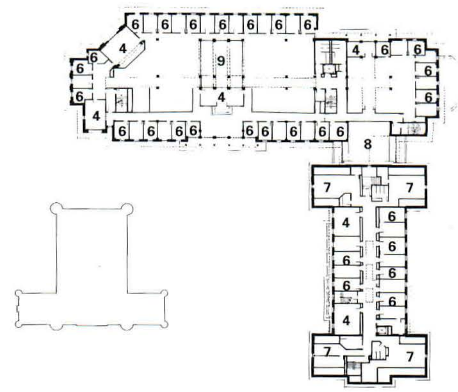
Pope's master plan, approved by the trustees in 1927, unified scattered earlier buildings, grouped related academic disciplines, proposed a series of quadrangles, and decreed that all new buildings be in the Georgian Colonial style. The Depression brought a halt to this period of enlightened expansion. Worse, in the era of rapid growth after World War II, spacious quadrangles and lawns were filled with badly scaled buildings, vistas were closed, and pedestrian circulation was interrupted and compromised in favor of the automobile. Fortunately, several Classically planned areas of the Syracuse campus have remained relatively intact, including Pope's main quadrangle in the vicinity of Eggers and Maxwell halls.

The Bohlin Cywinski Jackson firm so skillfully slipped Eggers Hall into this Classical context that unless one were to notice the newly invented Corinthian capitals of granite clamped together by aluminum flanges and steel-framed architrave, frieze, and cornice, it could almost be mistaken for just another 70-year-old specimen of well-done campus Georgian. Some of Eggers Hall's features that defer to buildings nearby are plain to see—for example, its six-columned portico is proportioned identically to that of its eight-

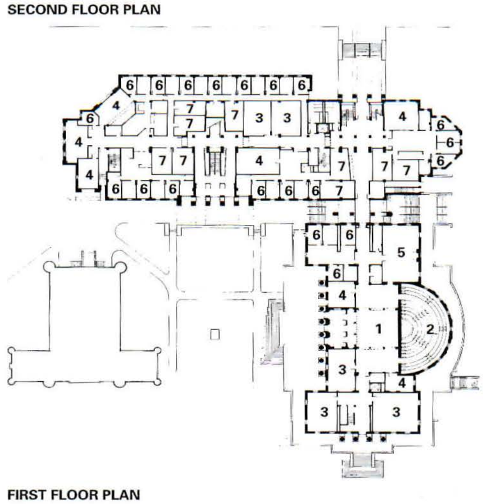




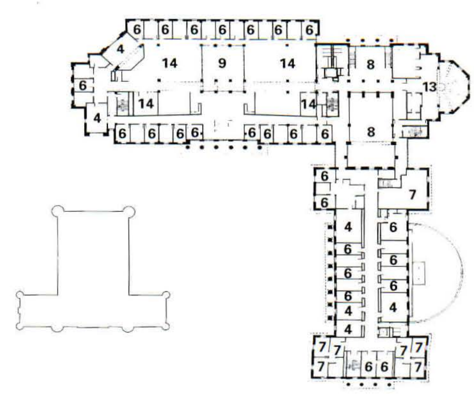
SECOND FLOOR PLAN



FOURTH FLOOR PLAN



FIRST FLOOR PLAN



THIRD FLOOR PLAN

40'/12m

BELOW: Eggers forms a boundary to frame campus landmarks such as John Russell Pope's Hendricks Chapel (right).
BOTTOM: Eggers' secondary portico is set back from its south facade.
FACING PAGE: Steel-and-glass bridge connecting Eggers to Maxwell has glass-roofed atrium at the second level.

columned neighbor on Maxwell Hall. Where possible, Bohlin Cywinski Jackson lined up the heights, fenestration, and cornices of Eggers with those of Maxwell, and matching brick is applied throughout.

Other equally adroit deferences to context derive directly from the care with which Eggers Hall is sited on the campus. Connecting to the south end of Maxwell Hall, the new building projects beyond it to form a wing of a new campus green flanked to the west by a small Victorian Gothic administration building. The porticoes of both Eggers and Maxwell face the green and its focus—a bronze statue of the young Abraham Lincoln. This deft placement of Eggers gives both Maxwell and Eggers halls the grand Classical setting their facades require. The new building also forms a needed border to the south that helps to frame a vista toward another major work of John Russell Pope, the east facade of Hendricks Chapel (1930), drawing the once-isolated building into a better spatial relationship with its neighbors.

The windows of principal Eggers rooms frame views of nearby landmarks; the main lobby/atrium overlooks the green; and a secondary two-story, gable-roofed, skylit glass atrium connects to and reveals the south face of Maxwell Hall. Little was done to the old hall apart from the restoration of its lobby. The two Eggers lobbies/atriums are straightforwardly contemporary; they are framed in steel with glass curtain walls, Classically proportioned but without direct Classical style reference. Each is generously dimensioned and serves as a students' commons.

The interiors of the new, six-story building are configured in unconventional ways. The Maxwell School of Citizenship and Public Affairs combines the social sciences with programs for public affairs. It houses the departments of political science, history, economics, anthropology, and geography with institutes of international relations and public administration. Partner-in-charge Frank W. Grauman explains that the departments

BELOW: Maxwell's south facade is framed by Eggers' glass-roofed atrium.
BOTTOM: Eggers' cafeteria at west end is topped by exposed concrete structure.
FACING PAGE: Interiors of Eggers Hall express structure and function without Classical reference, as in the steel-framed lobby/atrium overlooked by offices and seminar rooms.

and institutes are arranged not as enclaves for separate departments, but as "interdisciplinary academic villages with shared community space comprising 25 percent to 30 percent of the program." The undergraduate programs that draw the most students and generate the most traffic—such as auditorium, classrooms, laboratories, and cafeteria—are concentrated on the lower floors.

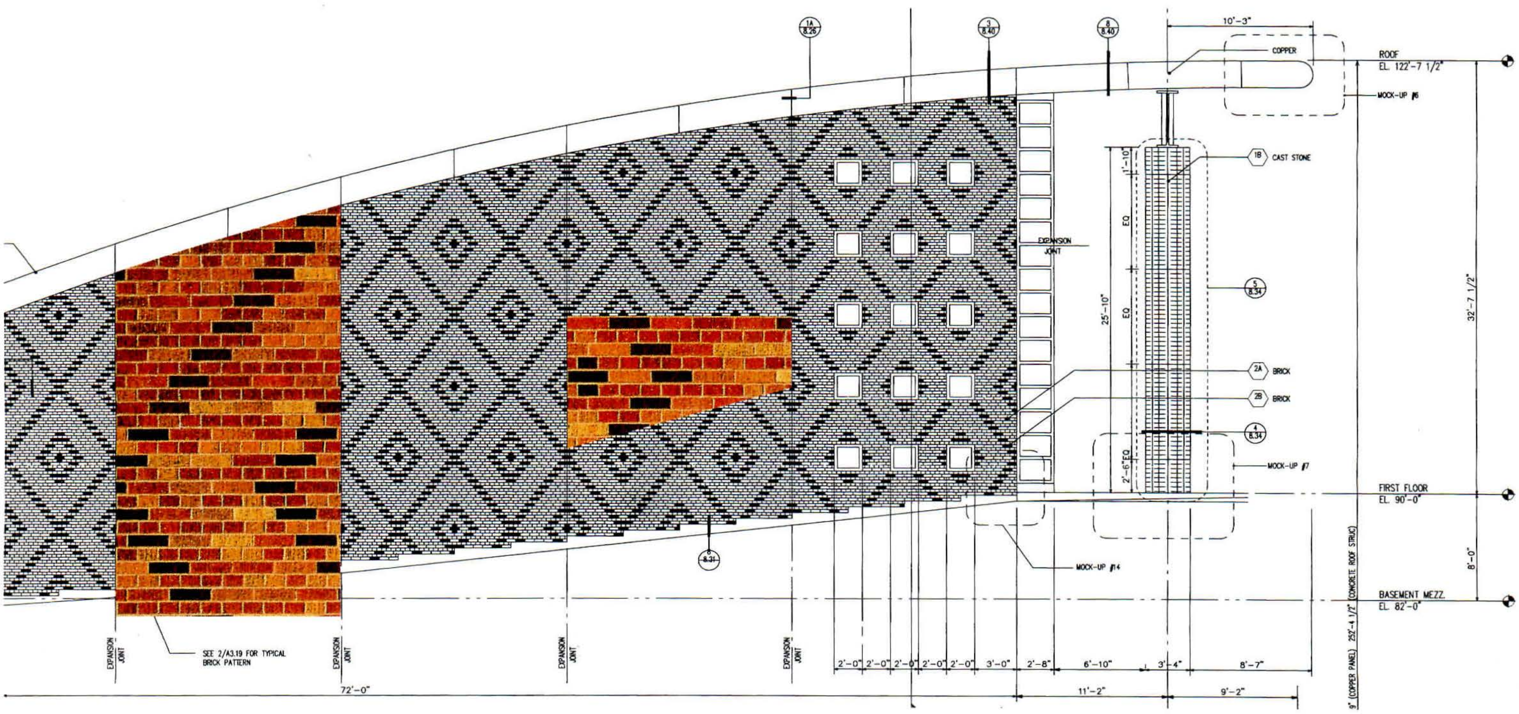
Eggers Hall's $4 million technological infrastructure consists of a state-of-the-art media, communications, and computing network. Students can plug in laptop computers at any seat in the lecture halls or at any table or desk throughout the building. University professors can prepare a slide lecture by tapping into the network for still images, audio bites, and film clips and file it all into the server without leaving the office. This high-tech activity takes place in spaces that are "warm, soft, with rounded edges," according to Dean John L. Palmer, in a building that from the outside appears almost as old and comfortable as the rest of the splendidly renewed John Russell Pope quadrangle of Syracuse University.—*Mildred F. Schmertz*

MELVIN A. EGGERS HALL
SYRACUSE UNIVERSITY
SYRACUSE, NEW YORK

ARCHITECT: Bohlin Cywinski Jackson—Peter Q. Bohlin (principal for design); Frank W. Grauman (principal-in-charge); Russell B. Roberts (project manager); Donald E. Maxwell, Lee Alison Clark (project architects); James A. Bell, Allen H. Kachel, Stephen Altherr, Deborah R. Dechant, Robert J. McLaughlin, Joseph N. Biondo, Alan K. Purvis, Irene C. Martin, Monica M. Matushoneck (project team)
ENGINEERS: Ryan-Biggs Associates (structural); Galson Corporation (mechanical/electrical/civil)
CONSULTANT: Synergistic Technologies (acoustics/audiovisual)
CONSTRUCTION MANAGER: Hueber-Breuer Construction Company
COST: Eggers Hall: $17.2 million ($130 per sq. ft.); Maxwell Hall (renovation): $1.6 million ($25 per sq. ft.)
PHOTOGRAPHER: *Karl A. Backus*

The Object of Art I

Technology & Practice



Brick, concrete masonry, and even the basic building blocks of architectural education are all adapting to change. Loadbearing brick construction has given way to veneered assemblies, allowing architects to freely create rich, patterned facades with colored and textured bricks. These modern interpretations of centuries-old construction offer a cost-effective method of replicating historic ornament.

Ordinary concrete block can be adapted similarly to boost efficiency of space and thermal performance. This month's residential feature highlights how a pair of Chicago architects specified loadbearing concrete masonry to meet restrictive building codes on a narrow urban site.

Architectural education is also changing to meet new demands. A profile of eight new deans of architecture schools reveals how curriculums are becoming more attuned to environmental, social, and regional issues to better prepare students for the realities of professional practice.

Computers, too, are reshaping the traditional design studio into an interactive workshop. While CAD was once an isolated specialty, universities of all academic bents are now integrating computers into their curriculums. Digital models—combined with traditional presentation methods—are expanding the academy's frontiers and leading students into the next century.

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Technology

Patterning Brick

Colored and textured units lend decorative detail to veneered facades.

Brick, a nearly 5,000-year-old building material, is currently enjoying renewed popularity. Architects are creating a wealth of pattern and detail through textured and colored brick at a cost only slightly higher than for undecorated brick facades. "Brick is one of the best buys in the industry," claims NBBJ Principal James Gresham. "The patterns give a richness of effect to the buildings, and they are not labor intensive."

Many of today's decorative brick veneer patterns are modeled after traditional construction born of structural necessity. Prior to the 1930s, headers and stretchers were arranged in bond patterns connecting the face brick with the brick or block behind it in a structural assembly; within this loadbearing construction, recessing and projecting bricks provided ornamentation.

Today, architects employ color and texture through veneer construction that connects a single wythe of face brick with metal ties to a metal stud or concrete wall. Not only must architects accommodate the differential expansion between the brick skin and the concrete or steel structure behind it, they must also be aware of potential problems arising from pattern making.

Because brick may be purchased some distance from the building site and have properties different from those of local brick, masonry consultant Colin Munro, based in Batavia, Illinois, advises architects to pay careful attention to the brick's initial rate of absorption (IRA). Because brick with a high IRA will quickly absorb moisture from an inappropriate mortar, thus inhibiting bonding, it is crucial to select mortar with water retention properties compatible with the brick.

Adding dark or intense color to mortar may further affect its strength and ability to bond with the brick specified. Color is created by adding noncementitious fines or particles to the cement and lime mortar mix. If too many fines are added, additional water is required, resulting in mortar of lower strength and durability. For more information on brick products and construction techniques, architects should contact the Brick Institute of America in Reston, Virginia, at (703) 620-0010.—*Virginia Kent Dorris*

RIGHT: The dining room of Weinstein Associates' Hospital for Sick Children is polychromed with standard red and gray bricks, manufactured in Williamsport, Maryland, by Redland Brick and in Perla, Arkansas, by Acme Brick Company.

MAXWELL MACKENZIE

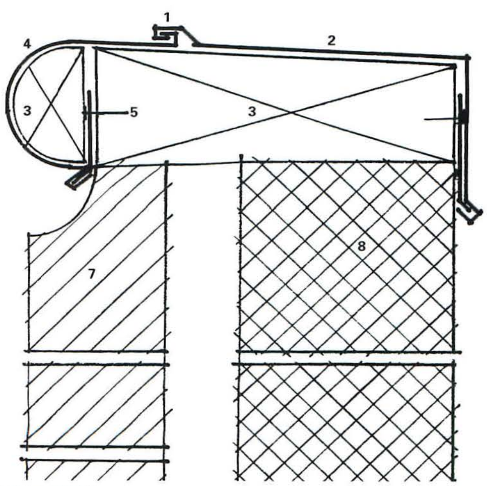
Hospital for Sick Children
Washington, D.C.
Weinstein Associates Architects
Herbert Cohen & Associates, Architect of Record

DETAIL DRAWINGS: Concave brick shape allows copper bullnose coping to join flush with brick wall surface.
BELOW RIGHT: Checkerboard inside brick medallion on north stair tower is inspired by Norman Cottage Revival architecture.
BOTTOM LEFT: Glass curtain wall in east elevation is revealed as portion of brick veneer pulls away from wall surface.
BOTTOM RIGHT: Curved end of peeled away east wall reveals thinness of hospital's brick veneer construction.

Pattern, integral to brick construction, is what attracts Amy Weinstein, principal of Weinstein Associates Architects in Washington, D.C. "The beautiful thing is that the color comes from the brick that makes up the skin, so the ornamentation is an integral part of the wall, not applied to it," explains Weinstein.

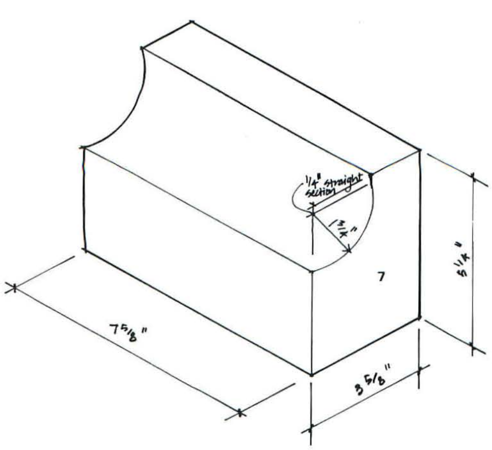
The intricate patterns of Weinstein's Hospital for Sick Children were inspired by the site's original 1929 Children's Country Home, a landmark example of Norman and English Cottage Revival tradition, restored to serve as a lobby for the new hospital. To guarantee that her brick patterns read clearly, Weinstein specified custom-colored mortars and custom-colored caulking to fill vertical control joints placed at regular intervals in the brick wall to prevent cracking.

Only two customized brick shapes were required for the project. The curved wall projecting from the east elevation called for a radial-shaped brick where the wall makes a tight turn. Weinstein also custom-designed a brick with one corner scooped out to allow the copper bullnose coping on all building elevations to be constructed flush with the patterned brick surface (drawings at left).

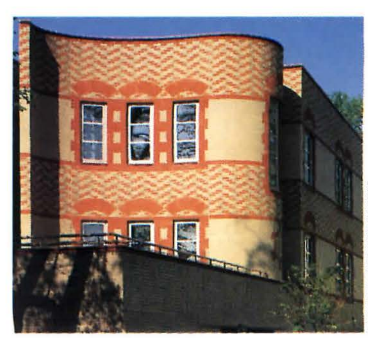


1 LOCK SEAM
2 SLOPED SECTION OF 2-PIECE COPING
3 PRESSURE-TREATED BLOCKING
4 COPPER BULLNOSE CLAMP
5 LOCK STRIP
6 COPPER CLEAT
7 CUSTOM BRICK
8 CONCRETE BLOCK BACKUP WALL

COPING DETAIL



COPING BRICK DETAIL



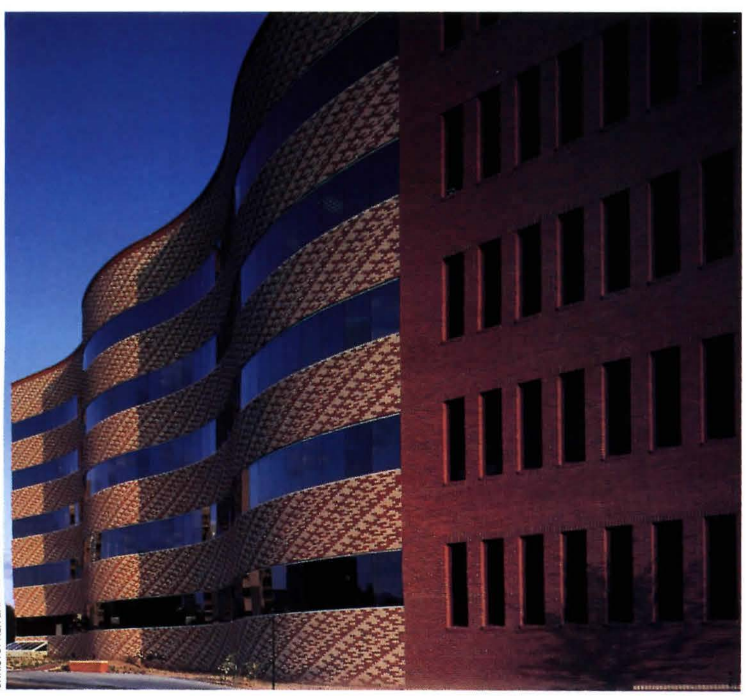
MAXWELL MACKENZIE PHOTOS

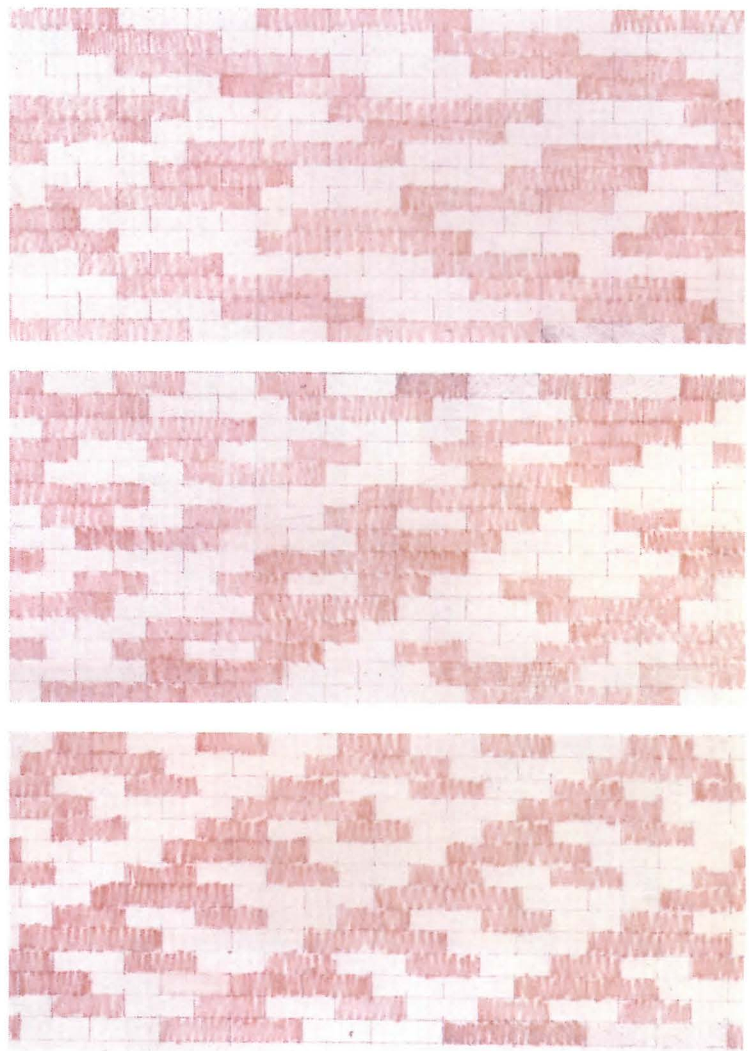
State Office Building
Tucson, Arizona
NBBJ, Architect

The intricate and fabriclike two-color brick pattern that appears on the serpentine facade of a Tucson state government office building was designed by NBBJ through a simple mathematical progression. The brick pattern is developed in a running bond pattern of successive courses of alternating red and cream-colored units, alternating singly or in groups of two or three. Recalling the geometries of Native American baskets, the pattern seems complex, but it was simple to lay. "These days, you can't afford to be labor intensive," explains NBBJ Principal James Gresham.

Just as the design of the five-story government building was inspired by Tucson's tradition of rudimentary, flat-roofed structures, so do the red and cream brick colors—manufactured by Phoenix Brick Yard in Phoenix, Arizona—correspond with the local brick vernacular. The concave and convex curves of the north facade's serpentine brick wall employ the same curving radius, which facilitated its construction. The west portion of the north wall, and the building's east and west walls are constructed from the same red Phoenix brick as in the patterned north facade.

BELOW LEFT: Red brick clads east wall of office building, connected to existing complex by a five-story atrium (left).
BOTTOM LEFT: Intricate two-color pattern covers serpentine north facade of five-story state office building.
DRAWINGS: NBBJ experimented with a series of mathematical progressions to develop serpentine wall pattern.





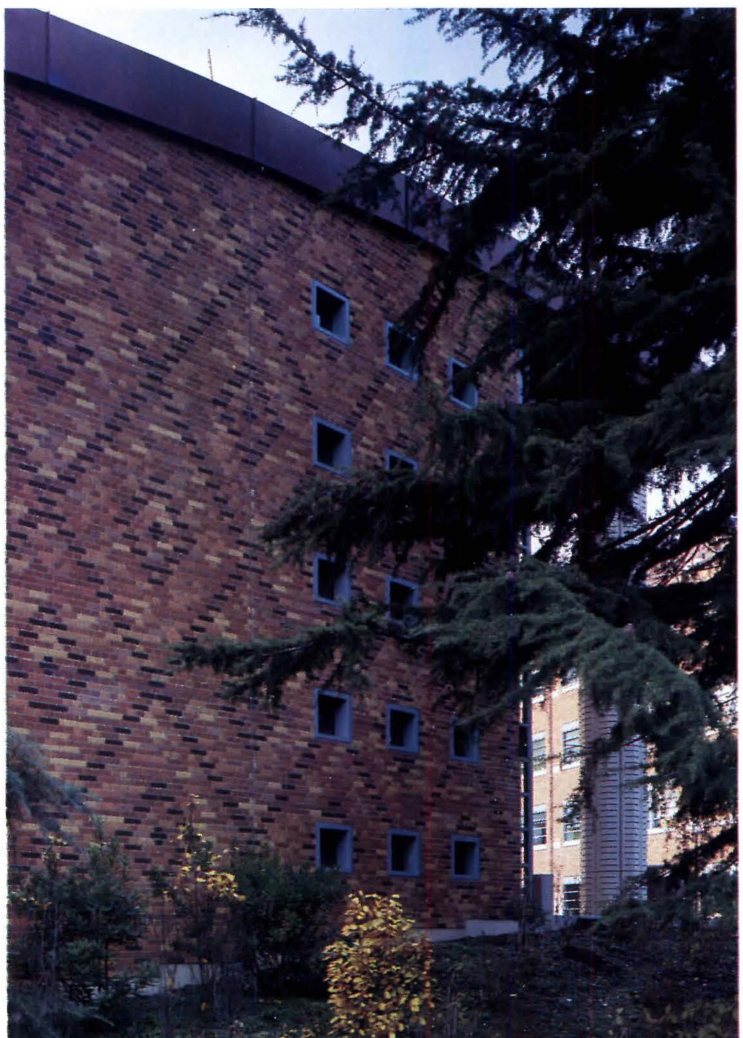
CHRISTOPHER BARONE PHOTOS

Physics and Astronomy Building
University of Washington, Seattle
Cesar Pelli & Associates, Architect
NBBJ, Associate Architect

BELOW: Striations in brick create shadows and intensify color.
BELOW RIGHT: Angled lines of brick pattern match those of steel trusses supporting glass wall outside large auditorium.
FACING PAGE, LEFT: Close-up view of northeast facade shows "rug" texture.
ELEVATION: Argyle pattern on auditorium building is enlarged version of motif found on historic campus structures.
DETAIL DRAWING: Dovetail anchor connects brick and concrete walls and accommodates movement of the two.

Eight shades of orange-hued brick, ranging from beige to brown, create random patterns on a new science complex at the University of Washington. Selected by architect Cesar Pelli, the wide range of color recalls the campus's oldest buildings, also constructed of multicolored brick, but is slightly lighter and more orange. The color helps distinguish the new structure. "Although we are bowing to the good historic buildings on campus, this is a modern building," says design team leader Kristin Hawkins of Cesar Pelli & Associates.

Five brick colors are carefully arranged in an English cross bond pattern comprising alternating courses of stretchers and headers. The exact mix of colored bricks for each surface, laid out at the factory before being shipped to the site, was specified by Pelli: The darkest colored bricks compose 20 percent of the mix, the next darkest bricks make up 35 percent, and the lightest colored bricks make up only 5 percent of the mix. All the bricks are finished with a combed "rug" texture, in which vertical striations are created in the units before they are fired. The striations create shadows intensifying the color, according to Hawkins.



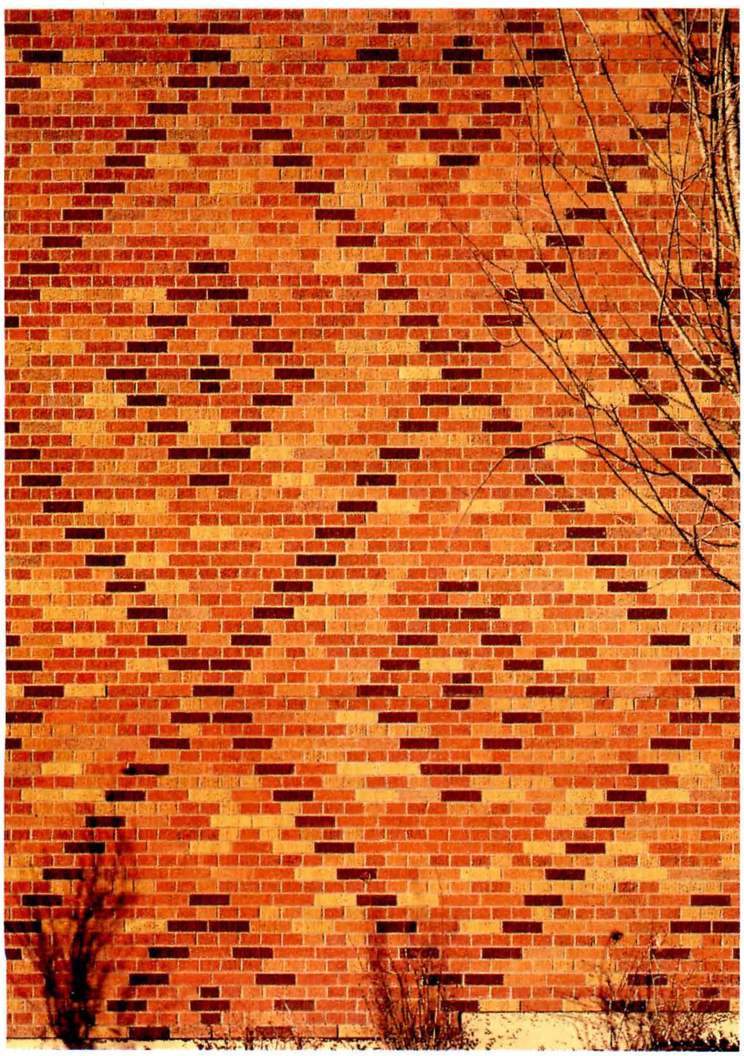
STRODE ECKERT PHOTOS

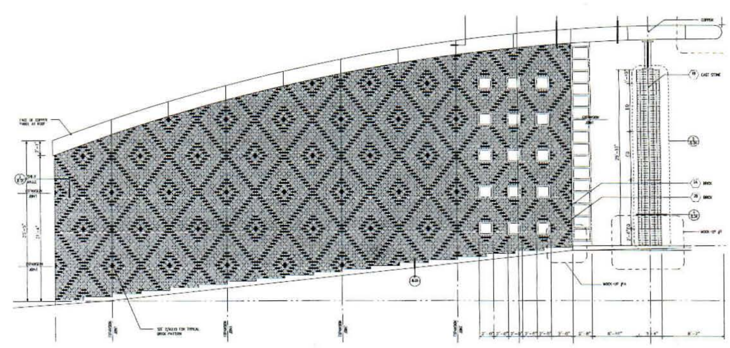
Two additional light and dark brick colors make up an enlarged argyle pattern on the curved surfaces of the large auditorium, planetarium, and air intake structures. Although Pelli originally considered smooth brick for the argyle pattern, large-scale mock-ups led the architect to select striated, rough-textured brick, while smooth-textured orange brick creates a curving wall around a spiral stair inside the auditorium building of the new Physics and Astronomy complex.

Most of the project was constructed with standard, rectangular-shaped brick from the Acme Brick Company in Austin, Texas; even the rounded building forms were created from orthogonal bricks to minimize the cost of special shapes, according to NBBJ project architect Anthony Stewart. Special brick shapes were required, however, to create rounded corner details at either side of the pier recesses throughout the university's science complex.

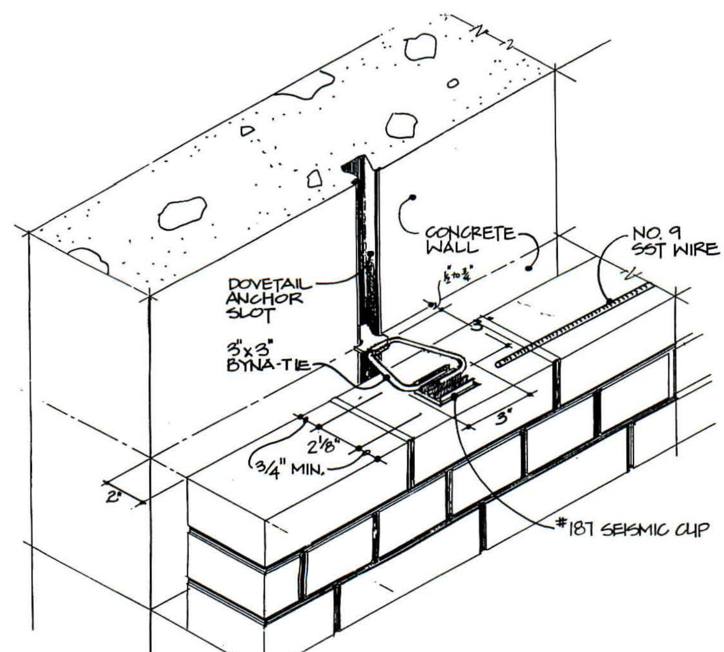
Early in the design process, the architects considered using a panelized system of erection in which preassembled panels of brick are installed as a unit. But research by NBBJ proved that this assembly method would have been more expensive than traditional construction. Cast-in-place concrete was selected for the building structure because it provides the stiffness necessary for the experimental work to be carried out by scientists within. Since the brick veneer and the concrete wall behind it will expand and contract at different rates, NBBJ specified a dovetail anchor-and-slot connection (bottom drawing) between the brick skin and the concrete structure behind. The connection will allow the materials to move relative to each other due to temperature changes or in case of an earthquake. All of the wall's metal components are constructed of galvanized steel, expected to last 100 years without deterioration, according to Stewart.

Much attention was given to the original placement of vertical expansion joints during design. Hawkins explains that Pelli's office did not want the vertical joints at building corners, fearing that the joints would cheapen the building's appearance. Stewart, conversely, argued that if architects did not put in expansion joints at the corners, "the building would put them there itself." The firms eventually compromised, setting vertical expansion joints back from the building edges by the width of a full brick.





EAST ELEVATION OF AUDITORIUM BUILDING



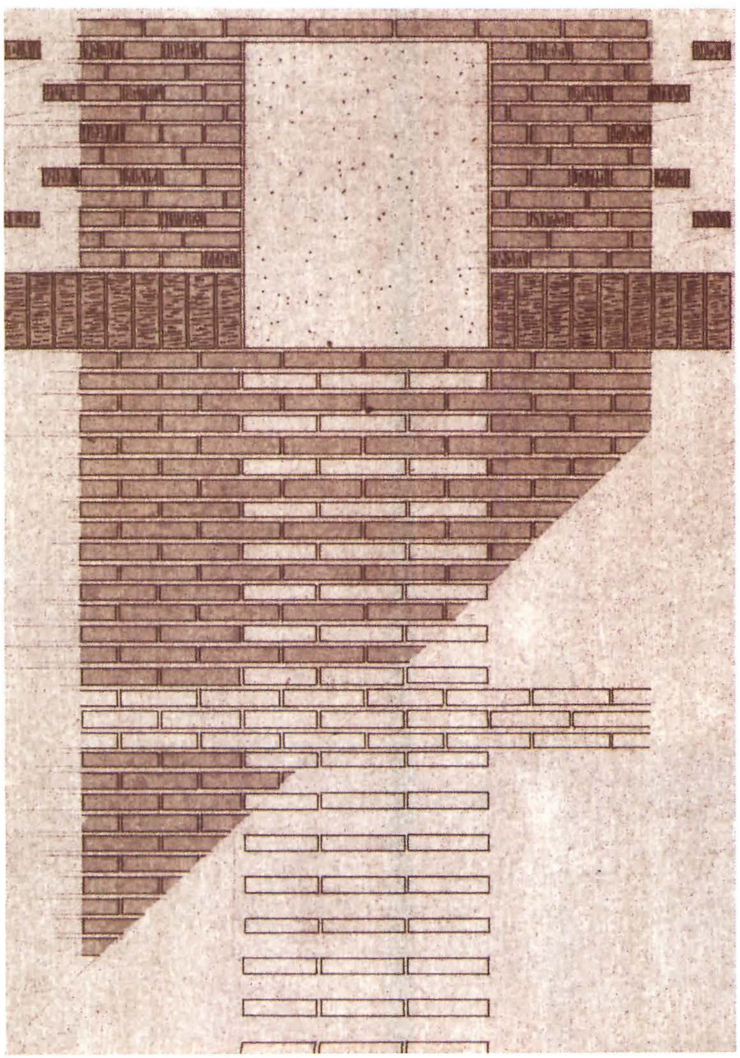
CONNECTION DETAIL

R. Haze Hunter
Conference Center
Cedar City, Utah
FFKR, Architect

Red brick with two finishes, one smooth and the other combed, was manipulated by architect FFKR to create a subtle illusion of depth and pattern on an addition to a Southern Utah University campus building. "We had to use very flat detailing to keep the project within cost," explains Principal M. Louis Ulrich.

Unlike the original 1927 building, in which structural brick piers support a steel roof truss, the brick of the addition is simply a veneer. To match the original building, FFKR clad the addition in textured brick, manufactured by the Interstate Brick Company of West Jordan, Utah. The bricks' surface was vertically combed to create striations and then lightly pressed to minimum roughness before firing. The architect imitated the projecting brick piers of the 1927 structure by creating two-dimensional, vertical patterns of smooth- and rough-textured brick arranged under rectangular precast concrete inserts that suggest pier caps. FFKR specified red mortar to match the mortar of the original building, which was initially gray but turned red as its iron content oxidized, and raked horizontal mortar joints abutting smooth-finished brick surfaces to create shadows.

DRAWING: FFKR created illusion of a brick pier through arrangement of smooth and textured red bricks.
BELOW RIGHT: Planar brick pattern recalls three-dimensional structural brick piers on building's east facade.
BOTTOM RIGHT: Smooth-finished brick appears lighter in color while combed-finish brick appears darker on east facade.



DOUGLAS KAHN PHOTOS

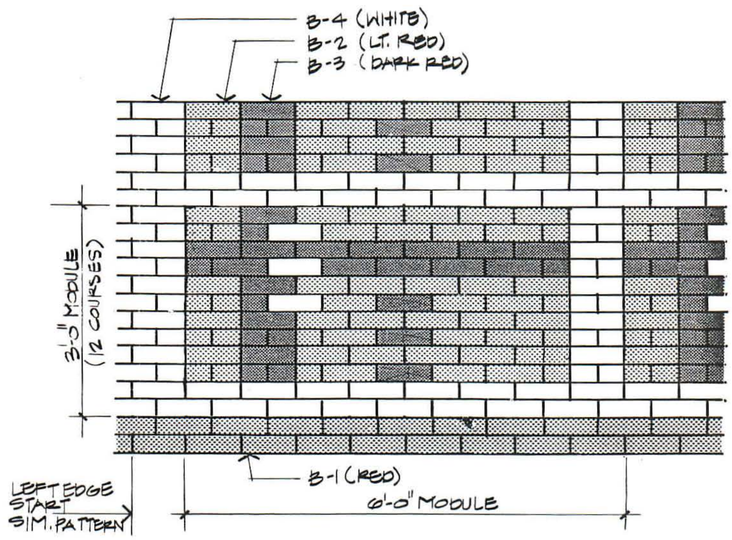
Arizona Health Sciences Center
Medical Library
Tucson, Arizona
NBBJ, Architect

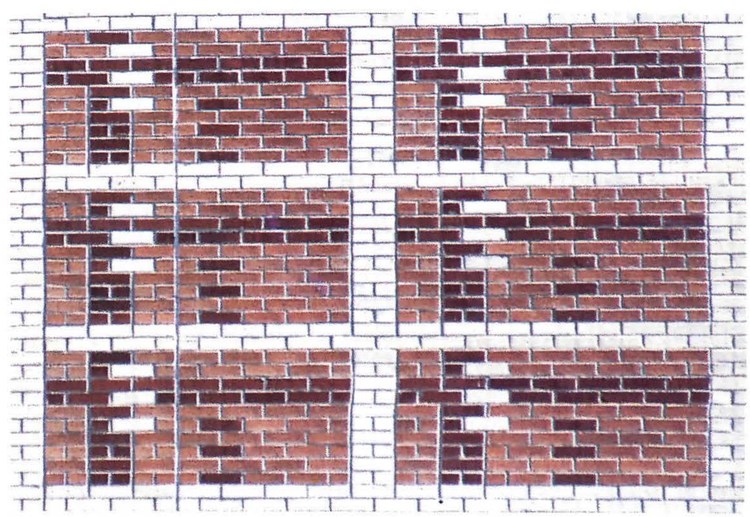
White, light red, and dark red bricks manufactured by Phoenix Brick Yard in Phoenix are patterned by NBBJ to visually extend a central wall of windows on the north and south elevations of an addition to the University of Arizona medical library in Tucson.

Brick colors were drawn from the materials of other medical campus buildings: The upper floors of neighboring buildings are clad in white precast concrete, while the lower floors are finished in dark red brick. NBBJ also duplicated the large, Tucson-pressed brick historically applied on campus that measures 3 inches by 9 inches instead of the typical $2^2/_3$ inches by 8 inches.

NBBJ shunned detailing the library addition's veneer with recessed and projecting brick patterns and avoided specifying the highly textured brick of many of the surrounding structures, fearing that the strong, vertical Arizona summer sun would produce excess shading. Instead, the architect opted for a velour finish that adds only a slight roughness to the brick face. Mortar joints were kept neutral, and the gray cement mortar was tooled deep enough to ensure a watertight bond between the bricks without casting shadows.

BELOW LEFT: Geometric brick pattern simulates central window to east and west on library's north elevation.
BOTTOM LEFT: Shadows on recessed window of south elevation are mimicked by groupings of colored bricks.
DRAWING: Carefully arranged mortar joints and white, light red, and dark red bricks re-create window geometry.
BOTTOM RIGHT: Detail reveals stacking of polychromatic brick.





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the new deans list

balancing the frontiers of design and theory with the realities of professional practice

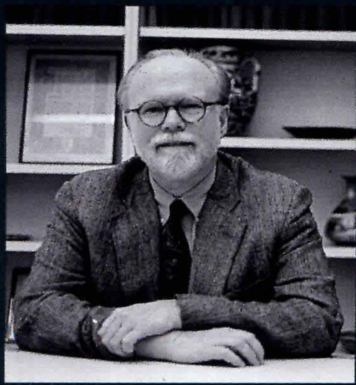
A new generation of deans is taking the helm at many schools of architecture. Our profile of eight of these leaders, appointed over the past three years, suggests that the stylistic preoccupations of the last century—from the Modernist rejection of Beaux Arts traditions to the Postmodernist revision of Modernism—are now subsumed by economic, social, and environmental realities. Today's students must be instilled with a more urgent sense of stewardship for their communities.

Several educational trends emerged from interviews with these school administrators. For example, the new deans agree that the proliferation of computer technology is changing the academy. Some schools, such as the Massachusetts Institute of Technology, are at the forefront of the electronic revolution while others, such as the University of Kansas, still grapple with incorporating computer-aided design into the curriculum. Regardless of computer literacy, traditional modeling and representation remain integral to each school's design education and will survive the digital revolution, as these educators roundly assure.

Most of the deans argue that architecture school is not a vocational training site and that a broader understanding of other disciplines—such as economics, history, and sociology—is essential to the advancement of an architectural career. University of Kansas Dean John Gaunt argues that "it was never the university's role to send people into the world ready for practice." The purpose of architectural education, he believes, "is to lay the groundwork for critical thinking."

But recent graduates complain that "critical thinking" is not preparation enough for the often daunting, frequently inglorious sides of practice. Fortunately, ongoing changes in the design studio—still the heart of each school's curriculum—suggest that emerging architects will be better prepared to solve the problems of the real world. These new deans are expanding the role of the studio to address issues such as environmental conservation, housing the poor, and regionally sensitive design. Social agendas in the design studio are often strengthened by hands-on community planning, with students working alongside real estate developers and urban designers in the cities and towns that surround their campuses.

Almost unanimously, these new deans urge students to abandon the image of the architect as an heroic artist designing alone—and to learn a more collaborative approach. The men and women interviewed are good role models for this way of working: Of the eight profiled, seven are practicing architects. Dean John Gaunt of the University of Kansas was CEO of Ellerbe Becket, and Deans Cynthia Weese of Washington University, William McDonough of the University of Virginia, and Tulane's Donna Robertson all came to their posts as principals of their own firms, adding a dose of reality to their schools.—*Bradford McKee*



"the way to build respect in the institution is through research."

Architecture needs to raise its profile within the academy.

Jerry Finrow, AIA
University of Oregon
Eugene, Oregon

ACADEMIC EXPERIENCE: Founding member and faculty research associate, Center for Housing Innovation, University of Oregon, 1988 to present; Professor of Architecture, University of Oregon, 1985 to present.
EDUCATION: M. Arch., University of California, Berkeley, 1968; B. Arch., University of Washington, Seattle, 1964.
PRACTICE: Co-principal Finrow/Architects, Eugene, specializing in small-scale and residential projects.

Year installed as dean: 1992
Current enrollment: 570; 394 undergraduate, 176 graduate; 38 percent women, 13 percent minorities
Faculty: 29 full-time; 22 part-time
Budget: $3.11 million (FY 1994-95)
Accredited degree programs: B. Arch., M. Arch.; and post-professional M. Arch.
Curriculum: The University of Oregon architecture school was founded in 1914 on Beaux-Arts principles, but in 1922, Dean Walter Ross Baumes Wilcox abandoned this tradition for a maverick curriculum of "noncompetitive, individualized" education. Wilcox remained dean until his death in 1947, and his noncompetitive tradition endures at Oregon to this day. Dean Jerry Finrow remarks that such a curriculum compels students to focus on education for its own value. "As a result, they're highly motivated and not risk-averse."

Curricular requirements balance professional and liberal arts studies. B. Arch. and M. Arch. degrees both require 10 quarter-term studios—undergraduates take two each year for five years. Core and elective coursework systematically grow more complex: The first year provides an introduction to design skills, design content, and architectural history; the second presents fundamental concepts, skills, and methods in the design process, design arts, and technology; and third-year courses seek to broaden students' knowledge in design media, human spatial responses, and technics.
Educational philosophy: The university's role is to provide a design education, Finrow maintains, but the pressures of keeping that instruction comprehensive are becoming tougher. "We are design-focused in that students spend most of their time in the studio designing buildings," Finrow explains.

However, "the coin of the realm in higher education is research," he declares. "We want to be the first in line," within the university system, "and the way to build respect is through research."

The school's annual research budget exceeds $1 million. The most ambitious initiative is the Center for Housing Innovation, which studies energy-efficient residential construction technologies and higher density development in the Western U.S. to create more efficient housing patterns.
On education and practice: Finrow advocates the idea of more reality-based team experiences—integrative education—for architecture students. As a good example of integrative education, Finrow cites the university's recent Design/Business Collaboration, which gathers students from architecture, graphic design, management, and computer science to devise a typical corporate design solution. In 1994, for example, a cross-disciplinary student team collaborated on the business plan, capital investment, programming, and graphic design for a women's healthcare facility. With some refinement over the next few years, Finrow expects the architecture school will offer collaboration as a studio option.
Role of computers: Students use CAD heavily to develop their design skills. The architecture school was among the first at the University of Oregon to be completely wired for electronic networks. Finrow's department participates quite heavily on a bulletin board service run by several architecture schools in the Western states, including that of the University of Hawaii.
Community initiatives: About $500,000 of the architecture school's research budget is forwarded to community service projects. These include the Community Planning Workshop, the Portland Center for Urban Architecture, and the department's partnership in the Portland Community Design Center, all of which help localities with design and urban planning assistance.
(Editor's note: As this article went to press, Jerry Finrow was named dean of architecture at the University of Washington. A new dean for the University of Oregon's architecture school has not yet been named.)

"most architects are trained to think about architecture in a much different way than it really exists."

Today's students need new kinds of tools to meet today's demands.

Cynthia Weese, FAIA
Washington University
St. Louis, Missouri

ACADEMIC EXPERIENCE: Frequent lecturer and visiting critic at schools throughout the Midwest since 1978. AIA/Association of Collegiate Schools of Architecture Research Council, chair.
EDUCATION: B. Arch., Washington University, 1965; B.S., Washington University, 1962.
PRACTICE: Founding principal, Weese Langley Weese, Chicago, chiefly residential projects and schools. AIA vice president, 1993; Chicago Chapter AIA Foundation, president, 1988 to 1989.

Year installed as dean: 1993
Current enrollment: 314; 189 undergraduate, 125 graduate; 35 percent women, 19 percent minorities
Faculty: 15 full-time; 34 part-time
Budget: $6.5 million (FY 1994-95)
Accredited degree program: M. Arch.
Curriculum: Founded in 1904, the Beaux Arts curriculum of Washington University in St. Louis was supplanted in the 1940s by the Modernist tenets of Walter Gropius and Mies van der Rohe. "You would never have drawn an arch," claims dean of the school of architecture Cynthia Weese, who enrolled as a graduate student at Washington University in 1963. "It was a total Bauhaus education, period." In the 1980s, however, Modernism in turn gave way to historicism.

The school pioneered the "4+2" degree in 1967, a bachelor's degree followed by a two-year master's degree in architecture. The school emphasizes liberal arts studies, particularly for undergraduates. Of the 16 undergraduate students that Weese advises directly, most are working toward completing double majors or minors in languages, philosophy, or classics. To give students ample time for coursework in the humanities, the number of studio days per week has been reduced from four to three. "We also want students to continue liberal arts studies at the upper levels," Weese maintains.

Master's degree candidates must complete a minimum of 24 units of studio courses, at least 29 related units in architecture, and additional electives. For advanced professional degrees, candidates must complete 17 units of electives in theory, history, or technology.
Educational philosophy: While some bemoan architects' shrinking influence, Weese maintains that students and all practitioners simply need new kinds of tools to meet today's demands of consultants, financiers, lawyers, regulators, and politicians. "You have to understand the language, if nothing else, to work with these people," Weese explains. "You have to get acquainted with the culture of those disciplines because they're going to be a part of your life."
On education and practice: Weese thinks the perceived gulf between the practice and academic worlds is "overstated"; yet the perception itself is formidable. Education and practice she observes, "have to flow together better than they do." Weese seeks the advice of practicing alumni on crafting a curriculum that is more responsive to professional practice. "Most architects are trained to think about architecture in a much different way than it really exists," the dean laments.
Role of computers: The school recently bought $45,000 worth of computer equipment, thereby doubling its hardware inventory to include 16 Intel-based 486 personal computers; two Pentium 100s; a Silicon Graphics Indigo Extremes unit; and six Macintosh PowerPCs, models 6100/AV and 8100/AV. The Macintoshes' audiovisual capabilities run a video conferencing package called CUSeeMe, which allowed Washington University students to join the Virtual Design Studios held in conjunction with several universities in North America and Asia.

Students execute a great deal of modeling by computer. The primary CAD package is AutoCAD but students also use MicroStation, form•Z, and ArchiCAD. For rendering, students work with StrataVision, Studio Pro, 3D Studio, and Renderize. Weese notes, however, that students spend considerable time drawing and making models and furniture from wood and metal in the machine shop.
Community initiatives: Last year, two local alumni of Washington University's architecture school established an internship program to place students in St. Louis firms for the summer. About 25—which means nearly all the graduate students in town for the summer—found a place in area offices. Weese expects the program to expand to Chicago. The school has also outlined plans for a Community Design Workshop, which would seek pro bono urban design projects in St. Louis inner-city neighborhoods.

Students must prepare for the practical world—and the impractical world.

"It was never the university's role to send people out in the world ready for practice."

John C. Gaunt, FAIA
University of Kansas
Lawrence, Kansas

ACADEMIC EXPERIENCE: Lecturer at several universities, including University of Southern California, Arizona State University, University of Kansas, and University of Notre Dame, 1985 to 1994; Lecturer in design history, National Association of Women in Construction, 1980 to 1985; Drawing instructor, Barnard College, 1974 to 1975; Adjunct associate professor, Columbia University, 1972 to 1975.
EDUCATION: M. Arch., University of Pennsylvania, 1967; B. Arch., University of Minnesota, 1964; B.A., University of Minnesota, 1962.
PRACTICE: President, Chief Executive Officer, and Chairman, Ellerbe Becket, Minneapolis, 1975 to 1994.

Year installed as dean: 1994
Current enrollment: 800; 650 undergraduate, 150 graduate; 28 percent women; 7 percent minorities
Faculty: 36 full-time, 8 part-time
Budget: $2.5 million (FY 1994-95)
Accredited degree programs: B.Arch.; M.Arch.
Curriculum: The core curriculum for the five-year B. Arch. degree requires a sequence of design studios representing one-third of the total credits needed for the degree. Simultaneously, students complete sequences in graphics, structures, construction, and history and theory, with an additional complement of electives in site planning, urban design, and professional practice.

Dean John Gaunt hopes to build on KU's international programs by developing new exchange programs in Eastern Europe, Latin America, and Asia; the school currently offers junior-year-abroad exchanges in Scotland and Germany. Gaunt, who traversed the globe as CEO of Minneapolis's Ellerbe Becket, considers such overseas exposure "absolutely critical" for students; in fact, a requirement in this university's graduate programs is to study abroad.
Educational philosophy: Having recently left the helm of Ellerbe Becket, Gaunt seeks to bring more of a practical perspective to students at KU. Students must prepare for the practical world, Gaunt notes, where consultants, lawyers, and regulators run the show alongside architects. Gaunt also reminds students of the profession's expansion: Architects today are as likely to be solving an environmental problem or rebuilding urban infrastructure as fitting floor plates for buildings. "These times demand specialization," Gaunt observes, "but the architect is still the critical guide of esthetic development."
On education and practice: Gaunt recently shifted from 28 years in practice (with periods as an adjunct or visiting instructor) to the thick of academe. The perceived crisis in the profession of architecture, whether real or not, is "occasioned by the biggest technological revolution architects have ever experienced," he contends. Today's architects face possibly the most terrific competition in generations as well as more demanding clients who resist paying higher fees.

Young people, Gaunt says, are expected—often unrealistically—to deal with those pressures more effectively than practitioners have in the past. "The profession has every right to expect better-informed students," Gaunt allows, "but there's some short-memory syndrome involved. We start practicing and making demands on people entering the profession, and criticize the schools for not preparing students adequately, but it was never the university's role to send people out in the world for practice," the dean asserts. "The whole point [of a design education] is to lay the groundwork for critical thinking."
Role of computers: KU stands on "the middle of the curve" in integrating computers into the curriculum, Gaunt says. "But we're making reasonable headway." The school tries to concentrate its limited funds in certain kinds of software and systems. Students may take a 300-level course in computer applications, which is primarily based on AutoCAD and teaches computer design skills by focusing on one progressive, semester-long project. A graduate-level course in project development uses Microstation as the predominant tool to show computer applications in several areas of design and construction management.
Community initiatives: The school maintains a design center in Kansas City, 35 miles away, where students undertake applied urban design projects to augment situations they address in the studio. Yet, while the school supports community outreach by students, "our focus is very much on academic programs," Gaunt asserts. However, the dean adds, the eventual demands of practice on students compel the faculty to continuously reevaluate the balance between applied and academic research.

"Sustainability is a shibboleth. You're either destroying or restoring."

A house is not a machine for living. It's a living machine.

William A. McDonough, AIA
University of Virginia
Charlottesville, Virginia

ACADEMIC EXPERIENCE: Guest critic, Yale University, 1994; Lecturer at various U.S. universities, 1990 to present.
EDUCATION: M. Arch., M.F.A., Yale University, 1976; B.A., Dartmouth College, 1973.
PRACTICE: William McDonough Architects, New York, Charlottesville, Virginia, 1987 to present.

Year installed as dean: 1994
Current enrollment: 523; 331 undergraduate, 192 graduate; 37 percent women, and 17 percent minorities
Faculty: 23 full-time; 15 part-time
Budget: $3 million (FY 1994-95)
Accredited degree programs: M. Arch., 2-year and 3 1/2-year degrees; M. Landscape Arch.; M. Planning; M. Arch.History.
Curriculum: The three following paths lead to the M. Arch. degree: Graduate students without previous architectural studies are able to earn a professional degree within three years; students who already hold a bachelor's degree in architecture may obtain a professional master's degree in two years; and students with a professional degree may obtain post-professional status by pursuing advanced studies for one or two years.

Studio sections concentrate on one of several areas that include design theory, urban design, housing, institutional design, and adaptive reuse, though specific projects vary according to the agenda of resident and visiting critics. Each studio examines environmental concerns and encompasses most aspects of architecture, including programming, design communication, and technology.
Educational philosophy: Newly appointed Dean William McDonough, a widely chronicled "green" architect, intends to overlay Virginia's architectural training with the imperatives of sustainable design. "I'm not asking to change the school in terms of design criteria," McDonough says, "I'm just adding sustainability as another layer for students to consider in their work."

The dean's visionary ideas for a new "industrial ecology" define his full frontal approach to "redesigning design itself." Buildings, he avows, can be designed as "net energy exporters"—creating less energy than they burn and giving off no harmful emissions. Human communities, McDonough insists, can develop "closed nutrient loops" in place of open-ended energy consumption; his goal is to eliminate the concept of waste.

Rather than adopt the stylistic discourse that characterizes most schools, McDonough's agenda is ethical and political. Instead of focusing on appearance and form, he provokes students to question materials, preserve resources, and reduce the impact of building on the earth. "Sustainability is a shibboleth," he asserts, "You're either destroying or restoring."

McDonough has introduced new foundation courses such as Environmental Choices, which he teaches himself, and Architecture as a Covenant with the Earth Again, taught by colleague professor Peter Waldman. Required of all students in the department of architecture, these courses bring together landscape architects, architects, planners, and architectural historians.
On education and practice: Unlike the world of practice, McDonough points out, academe is the ideal place for new architects to perform risky research and probe experimental ideas in architecture. Students at the university should "feel free to explore," he maintains. "One of the things I loved about school is that you have this period of time to be free of commercial pressures. Design is such a hard thing to learn, and I loved the idea that you could spend some time at school in a miasma to work things out."
Role of computers: The school is well into the age of the Internet and makes extensive use of multimedia computers and databases for "modeling complexity"—searching for the upshot of many subtle actions and reactions in life-cycle analysis of buildings—and for conducting risk analysis of building materials.
Community initiatives: McDonough has already begun to turn the university's campus into a "living laboratory" for sustainable design. The effort began with students conducting an "industrial hygiene" audit of the campus to be sure that building and landscape materials give off no emissions; reducing plugloads in electrical systems to 9 watts; and incorporating greenhouse "superglazing" technologies to harvest sunlight.

"These kids are going to be making the decisions in 10 years. We take them in and try gently to tell them the hard facts."

Practicing architects have provided form devoid of politics and social intent.

Lars Lerup
Rice University
Houston, Texas

ACADEMIC EXPERIENCE: Professor of Architecture, Rice University, 1993 to present; Visiting Professor of Architecture, Southern California Institute of Architecture, Switzerland campus, 1991 to 1993. Professor of Architecture, University of California, Berkeley (UCB), 1987 to 1991; Associate professor, UCB, 1977 to 1987; Assistant professor, UCB, 1970 to 1977. **EDUCATION:** M. Arch.in Urban Design, Harvard University, 1970; B. Arch., University of California, Berkeley, 1968. **PRACTICE:** Independent practice since 1985, specializing in residential and furniture design.

Year installed as dean: 1992
Current enrollment: 204; 102 undergraduate, 102 graduate; 38 percent women, 6 percent minorities
Faculty: 10 full-time; 14 part-time
Accredited degree programs: B. Arch.; three M. Arch. programs
Budget: $2.3 million (FY 1994-95)
Curriculum: Rice's foundation sequence for undergraduates consists of four beginning studios focusing on form, texture, color, and materials. Three subsequent studios introduce design issues and methods. Completing the core are four courses in history and theory and two semesters of technology, in addition to the general studies requirements of the university. Workshops in the third and fourth years involve progressively more complex problems in building and urban design.

The choice of master's degree depends on the student's background. Students with no preparation in architecture go through four 10-hour studios and related courses before entering the advanced curriculum of 20 studio hours and 21 hours of support courses.

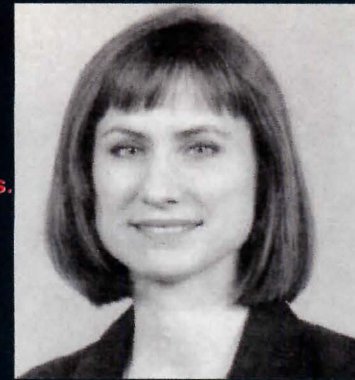
Master's candidates with previous professional architecture degrees may craft their own programs of elective courses.

Educational philosophy: Dean Lars Lerup rails against what he calls the "extreme orientation toward formalism" in architectural education over the last decade. Architects' academic training, he argues, urgently needs to develop a stronger social agenda; problem solving in the design studio should be more firmly grounded in the reality of crumbling urban infrastructure and the patterns established by suburban housing—problems typically dismissed in academia as "too mundane."
On education and practice: Lerup remarks that the architectural profession is fragmenting into specialties so singular that it has become an umbrella for several distinct subprofessions—as diverse as CAD technicians and marketing experts. "In 10 or 25 years, we'll talk more generally about design," Lerup wagers, "and not be so bound up in the preoccupations of architecture per se." Lerup intends to make students more familiar with the *realpolitik* of how the built environment develops; for instance, why do mortgage companies manage most residential development, and why is Tudor style so popular for high-end houses in Houston? "Realities are hard to convey to students with a very crude idea of what architecture takes," Lerup maintains. But "these kids are going to be making the decisions in 10 years," he adds. "We take them in and gently try to tell them the hard facts."
Role of computers: The school is working to blur the lines between the computer and the studio, and is aggressively adopting a variety of platforms and software. Students work on Macintosh, UNIX, and Silicon Graphics Indigo workstations. They use AutoCAD on all platforms as well as 3D Studio, Photoshop, Photostyler, ArchiCAD, and MiniCAD. The school just added five Macintosh PowerPCs and is putting them on faculty desks to integrate computing into the curriculum.
Community initiatives: Lerup has referred to Rice's architecture program as "a bit of a sleeper" in the area of urban activism and vowed on his arrival to lead the school to "address the city in a much more vigorous way." To accomplish that goal, undergraduate courses and studios have been increasingly directed at solving urban problems. Introduction to Urban Design, for example, uses Houston's inner city as its laboratory.

Lerup also established the Center for Professional Studies within the graduate program, where developers and urban designers from Houston work together with students on problems of the inner city, and studios call for such designs as low-income housing in blighted neighborhoods. Within this program, students may act as developers themselves, calling for schemes from their fellow students to address real urban problems. The Rice Design Alliance is another community outreach program intended to increase public awareness of design.

"The generation now entering school is quite adept at using computers. The generation teaching them is not."

Computers are design tools, not mere production devices.

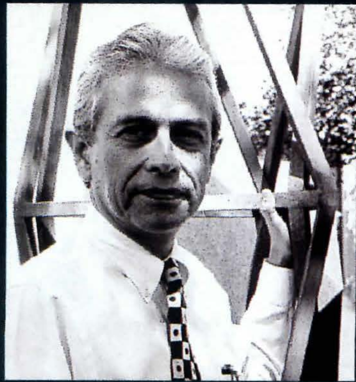


Donna V. Robertson, AIA
Tulane University
New Orleans, Louisiana

ACADEMIC EXPERIENCE: Associate Professor of Architecture, Tulane University, 1992 to present; Director of Architecture Program, Barnard College, Columbia University, 1985 to 1992; Assistant Professor of Architecture, Harvard University, 1983 to 1984.
EDUCATION: M. Arch., University of Virginia, 1978; B.A., Stanford University, 1974.
PRACTICE: Co-principal of Robertson McAnulty Architects, New York and New Orleans, 1986 to present, specializing in residential projects.

Year Installed as dean: 1993
Current enrollment: 281; 251 undergraduate, 30 graduate; 44 percent women, 20 percent minorities
Faculty: 22 full-time; 15 part-time
Budget: $1.8 million (FY 1994-95)
Accredited degree programs: B. Arch.; M. Arch. (accredited June 1994)
Curriculum: Students in the Bachelor of Architecture program start design in their first semester of study and continue through all nine terms. In the first year, studios are oriented toward two-dimensional and abstract three-dimensional design. The school recently restructured the upper-level architectural curriculum from four semesters to three semesters, to "get back on track with the norm," maintains Dean Donna Robertson. This affords undergraduates more time to study liberal arts during their early years; generally, they finish Tulane's core curriculum by the middle of the third year.

The new curriculum establishes a sequence of design projects that build on each other. Robertson notes that the projects are meant to mediate between analytical and inventive explorations, to "sharpen students' architectural vocabulary" and their understanding of the design process. History and theory are taught in tandem. Theoretical studies have turned to emerging questions of how computer innovations affect the substance of architectural representation.
Educational philosophy: Tulane recognizes the diversity of current architectural thought. However, in the age of stylistic pluralism, Robertson laments, students find "no easy models to copy." The polyglot directions of design over the last decade have taken a degree of boldness and legibility out of architectural representation, Robertson says. "Perhaps in reaction to the excesses of 1980s architecture," the dean wrote in an open letter to the school, "students have tended toward tentative, process-oriented presentations," relying more on models and three-dimensional material. "We need to get back the exuberance without the shallowness" in representation, Robertson submits, pushing for more drawings and more comprehensive views of buildings.
On education and practice: Robertson intends architectural study at Tulane to reflect the profession's redefinition that has taken place in recent years. "We want students to see how diverse a design education can be," she insists. The curriculum is now geared to examine current trends, such as the role of architecture in infrastructure projects, preservation and adaptive reuse, and alternative delivery methods such as design/build.
Role of computers: Tulane's architecture school has long emphasized the computer as a design tool rather than as a mere production device. First-year students learn some new aspect of computing each week, starting with graphics software such as Photoshop and then moving on to CAD. Students primarily work on AutoCAD in the computer lab, but the school has bought Macintosh Power PCs to encourage fluency in both DOS- and Macintosh-based platforms. The next phase is to expand the computer lab "out of its bounds and into the studio," Robertson notes. Soon students will be required to bring their own laptop, thereby decentralizing the computer lab. "The generation entering school is quite adept at using computers," Robertson observes. "The generation teaching them is not."
Community initiatives: Tulane recently became home to the Regional Urban and Community Design Center, which was founded under the auspices of the Southern Mayors Conference with a grant from the National Endowment for the Arts. Through the center, Tulane sponsors planning and preliminary urban design projects for small and midsized towns in the region. Professor Grover Mouton III teaches a studio in conjunction with the Downtown Development District, wherein students explore field conditions, restrictions, and design possibilities with local civic and commercial leaders.



Students need to be attuned to delivery as well as to design.

"A Whole Series of Professionals are a part of what We do and We act like they don't even exist"

Richard Eribes
University of New Mexico
Albuquerque, New Mexico

ACADEMIC EXPERIENCE: Associate Dean of the College of Architecture and Environmental Design; Director, Herberger Center for Design Excellence, Professor of Architecture and Professor of Planning, Arizona State University, 1976 to 1994.
EDUCATION: Ph.D. Urban Studies, University of Southern California, 1977.
PRACTICE: Maintains independent practice specializing in residential architecture, including low-income housing.

Year installed as dean: 1994
Current enrollment: 344; 148 undergraduate, 196 graduate; 35 percent women; 25 percent minorities
Faculty: 50
Budget: $1.5 million (FY 1994-95)
Accredited degree programs: M. Arch.; M. Community and Regional Planning.
Curriculum: Both the nonaccredited bachelor's and the accredited master's degree programs are built around a series of studios linked to lectures and lab work. First-year studios train students in nonanalytical freehand drawing and progress to formal plans, sections, and elevations. In second-year studios, students spend half the year studying design theory and methodology, and the next half exploring structure and tectonics.

B. Arch. candidates must complete 67 credit hours in architecture and 61 in arts and sciences. For the B.A. in Environmental Design, students complete 50 credit hours in architecture and 78 hours in other fields. The M. Arch. degree takes two years for students with pre-professional degrees and three-and-a-half years for students with degrees in other fields.

Educational philosophy: "We are not about the universality of architecture," contends Dean Richard Eribes. "We are about place." The school instills in students an appreciation of indigenous building materials, such as adobe and straw-bale construction, but Eribes and the faculty encourage students to borrow from both old and new technologies in their search for design solutions that are sensitive to New Mexico's climate and culture.

Eribes, who came to New Mexico from a professorship at Arizona State University in Tempe, emphasizes the relativity of architecture to allied professions. "Some schools are moving in the direction of more theory, hoping to produce graduates for academic circles," Eribes observes. "Our purpose is to produce leaders in the field."

On education and practice: Eribes is trying to incorporate law, construction, and real estate development into the architecture curriculum to instill a sense of the pressures and priorities that shape a typical building project. "We have to attune people to delivery as well as to design. There's a whole series of people who are a part of what architects do," the dean observes, "and we act like they don't even exist." That is why Eribes recruited developer Donald Tishman to the faculty part-time to teach a course in real-estate development. Many schools with a more theoretical focus have turned to "paper architecture," Eribes remarks, "which is wonderful as an art form, but one begins to wonder whether they're giving students the ability to translate that art into the craft of building."

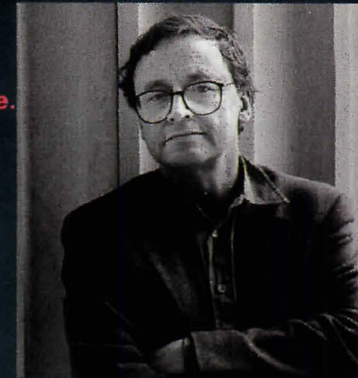
Role of computers: Students in architecture are trained to use computers in design; students in the planning program rely on computers for geographic information and data analysis. The school's two computer labs are stocked with both Macintosh and MS-DOS platforms, and video-imaging equipment is used as an extension of design studios.

Community initiatives: Since the late 1960s, the school's Design and Planning Assistance Center has joined low-income Albuquerque residents in need of design services with students who receive credit for their community work. Projects have ranged from improving small-town streetscapes to rehabilitating schools to designing affordable housing, both in New Mexico and across the border in Mexico. Moreover, the school recently held a charette to generate ideas for reusing Albuquerque's old airport terminal.

The school awaits funding from the state legislature to launch the Arid Americas Center for Research and Design, a think tank and applied research lab to be staffed by architects, engineers, materials scientists, and anthropologists as well as experts in business and development. The proposed center, if funded, will study not only regional building technologies but also water issues, energy consumption, and human settlements in the Southwestern desert.

"The idea is to go back and forth between computation and traditional media. The two are complementary."

Manual and digital design technologies are not mutually exclusive.



William J. Mitchell, FRAIA
Massachusetts Institute of Technology
Cambridge, Massachusetts

ACADEMIC EXPERIENCE: Professor of Architecture and Media Arts and Sciences, Massachusetts Institute of Technology, 1992 to present; Professor of Architecture, Harvard University, 1985 to 1992; Professor of Architecture, University of California, Los Angeles, 1970 to 1986.
EDUCATION: M.A., University of Cambridge, United Kingdom, 1977; M. Environmental Design, Yale University, 1969; B. Arch., University of Melbourne, Victoria, Australia, 1967.
PRACTICE: Founding partner, Computer-Aided Design Group, Marina del Rey, California, 1978 to 1991. Author of several books and numerous articles since 1977.

Year installed as dean: 1992
Current enrollment: 590; 83 undergraduate, 507 graduate; 34 percent women, 6 percent minorities
Faculty: 29 full-time; 28 part-time
Budget: $29.3 million (FY 1994-95)
Accredited degree program: M. Arch.
Curriculum: MIT's M. Arch. program is based firmly on design studies. Core design courses focus mainly on process and methodology. The school's overarching ethic is to devote particular attention to site and context in design, and to instill the critical sense of balance between the building program and the architect's interpretation. In addition to core studies, students elect courses in building technology, visual arts, architectural history, theory, criticism, and urban issues that are required of all master's degree candidates.

The curriculum is being expanded by Dean William Mitchell to encompass more courses in design computation, including a new, mandatory course in geometric modeling to teach "fundamental concepts," Mitchell maintains. The architecture and planning school maintains a fluid relationship, in terms of course offerings, with the departments of urban studies and civil and mechanical engineering.
Educational philosophy: Mitchell is a leading author and scholar on electronic design media. As architecture dean, he is trying to widen debate about the impact of electronics in architecture—"but not a technical debate," he insists. "It needs to be about technology, culture, and values." For example, what happens when design services are delivered electronically? How do the elaborately defined laws and boundaries of the physical world shape up in the enigmatic terrain of cyberspace? "We really need an informed, critical discourse and understanding of this technology," Mitchell asserts.

Yet resources are scarce. "We are still building the faculty," Mitchell contends, but the biggest obstacle is getting enough funding from the institution both to pay top-level faculty and to subsidize costly, cutting-edge equipment for students. "Students cannot afford to build loan debts" beyond the $19,000 per year they spend on tuition.
On education and practice: Academics and practitioners must "keep remaking their connections" to overcome recurring estrangement from one another, Mitchell suggests. "I don't have too much faith in grandiose institutional arrangements to make it happen." However, new technologies may break down the barriers between educators and architects in the offices: Video conferencing could open a new realm for visiting critics. MIT is one of several schools recently to pilot studios beamed electronically over information networks. "That's not a replacement for face-to-face contact," Mitchell assures, "but it is an extension of it."
Role of computers: Computers for Mitchell are vehicles of infinite delight and discovery, and he undoubtedly infects the school with his enthusiasm. The school is currently rebuilding its design studio space, wiring for access to electronic networks and design computation hardware. The first increment of this new studio opens this month.

Mitchell stresses that the newly wired studio remains a very friendly place for the familiar tools and forms of representation, "and at the same time it seamlessly integrates high-band computational abilities." The idea, Mitchell explains, is to go back and forth between traditional and digital media. "It's not an either/or question," he points out, "the two are complementary."
Community initiatives: Mitchell's surrogate community resides in cyberspace. MIT's architecture and engineering schools are jointly creating a series of six electronic design studios in schools around the U.S. to be fitted with advanced CAD infrastructure and the added capability to perform computer-aided manufacturing, which allows "rapid prototyping" of building components, Mitchell explains. "We are not recreating 19th-century drafting rooms."

Urban Block

A pair of Chicago architects creates residential infill with concrete block.

SITE PLAN: Lot contains garage at rear.
BOTTOM LEFT: East-facing entrance is sunk 4 feet below street level.
BOTTOM RIGHT: Beveled cedar shingles clad portion of west facade.

The renovation of derelict brownstones and brick houses in Chicago's Lincoln Park in the 1970s transformed the historic neighborhood into a posh urban enclave. The subsequent increase in property values, however, left the next wave of urban pioneers looking for new areas of the city to rejuvenate. One such district is Bucktown, an area northwest of downtown Chicago. Its low-cost houses, factory lofts, and empty lots are now attracting local architects such as Brininstool & Lynch, who designed a new house on a thin rectangular lot, measuring 24 feet wide by 120 feet long. A brick house to the north and a vacant lot to the south enclose the site.

Local building codes for wood construction required setbacks of 6 feet on the north and south sides, which would have reduced the width of the already narrow structure by half. With masonry construction, however, the setbacks were reduced to just over 2 feet on each side. "Masonry is much more expensive than wood framing," explains principal Brad Lynch, "but it was necessary so we could maximize the building width."

Lynch and partner David Brininstool employed standard concrete block to create double-wythe load-bearing walls. A 2-inch-thick board of rigid insulation is sandwiched between the two layers of block, which are laid in a traditional running bond. A silicone-and-water-based sealant applied to the block's porous exterior surface prevents water infiltration. Although concrete construction isn't typical for houses in Chicago's cold climate, this assembly provided a substantial R-13.5 insulation value.

The front and back facades of the three-story house are constructed of traditional wood framing clad in beveled cedar siding. Small, vertically stacked square windows juxtaposed against larger, mullionless windows provide natural light and impart scale to the concrete structure. Bowstring trusses support the structure's vaulted roof.

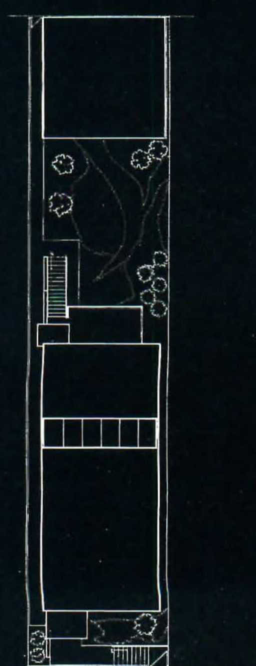
The 20-foot-by-50-foot rectangular footprint of the house is divided into two rooms—one at the front and one at the rear—separated by a central zone of services. A stair located along the south wall of the house is enclosed by partitions composed of 4-foot-by-8-foot birch plywood panels.

The first floor contains a small entry vestibule, a study, and a family room that opens onto an enclosed backyard. On the second floor, a U-shaped kitchen separates the dining room at the front of the house from the living room and a deck at the rear. A 4-foot-by-20-foot light well, topped by an acrylic skylight that extends the entire width of the structure, separates the third-floor bedrooms and brings daylight into the living room below.

Brininstool & Lynch specified 16-inch-deep, open-web wood floor joists, which allowed them to place mechanical ducts and electrical conduits in the interstitial space. Because electrical outlets could not be drilled into the concrete block walls, the architects mounted black metal boxes on the walls, 2 inches above the floor. A small, wooden channel conceals the conduit connection from the floor. "Putting the mechanicals in the floor meant that we didn't have to accommodate them in ceiling soffits," adds Lynch. "This let us define the interior volumes however we wanted."

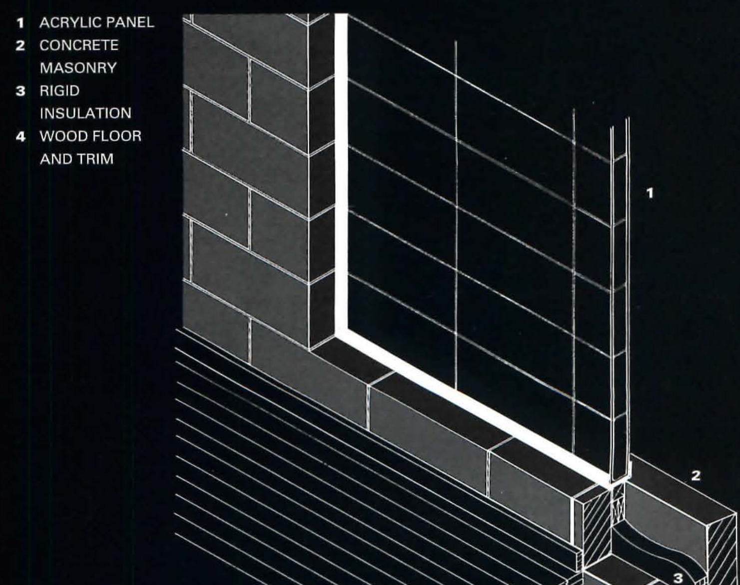
Two 15-foot-by-8-foot translucent acrylic panels inserted into the south-facing wall admit soft, filtered daylight to the second-floor living room and dining room. These panels, reminiscent of Japanese shoji screens, also block views of a now-vacant adjoining lot and ensure privacy if the lot is eventually developed. Exterior fixtures mounted above the panels illuminate the interiors at night.

One unexpected benefit of the house's concrete-block construction is its acoustic absorption, which is much higher than that of sound-reflective drywall. "It's great for our client, who's something of an audiophile," explains Lynch. "When he listens to music, the block absorbs just the right amount of sound."—*Raul A. Barreneche*

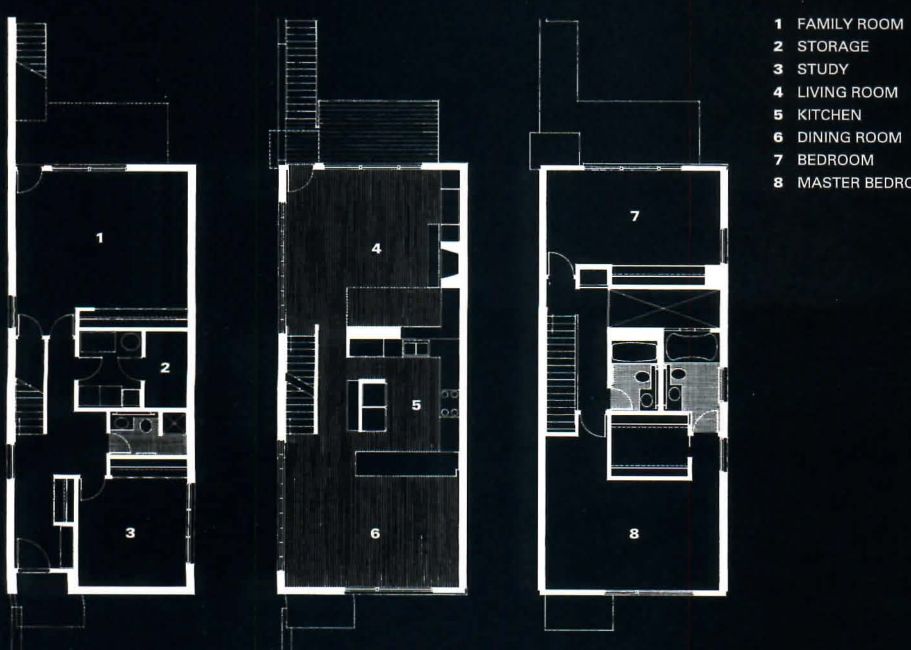

SITE PLAN 10'/3m

SCOTT MCDONALD / HEDRICH BLESSING PHOTOS

JAMIE PADGETT PHOTOS



WALL DETAIL



1 FAMILY ROOM
2 STORAGE
3 STUDY
4 LIVING ROOM
5 KITCHEN
6 DINING ROOM
7 BEDROOM
8 MASTER BEDROOM

BASEMENT FLOOR PLAN

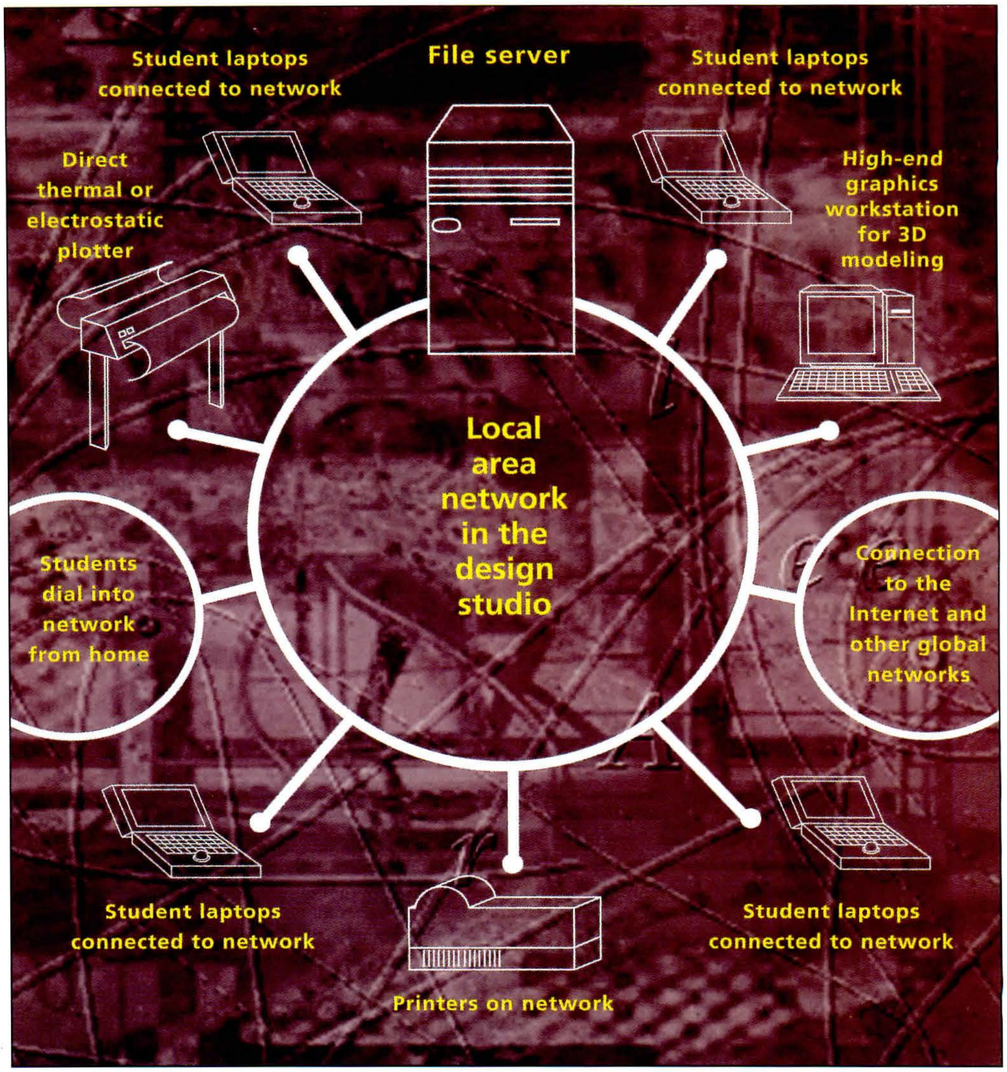
FIRST FLOOR PLAN

SECOND FLOOR PLAN

FACING PAGE, TOP: Interior partitions and cabinets are clad in birch plywood.
FACING PAGE, BOTTOM LEFT: At night, downlights above translucent screens diffuse light to interior.
FACING PAGE, DETAIL: Concrete blocks enclose rigid insulation and frame supporting acrylic panels.
ABOVE: Light well illuminates second-floor living room.
PLANS: Central support spaces bisect rectangular floor plates.

Wiring the Academy

From labs to design studios, computers are transforming architectural education.



ABOVE RIGHT: Electronic infrastructure typical of many architecture schools connects input and output devices through a local area network, with links to global networks such as the Internet.

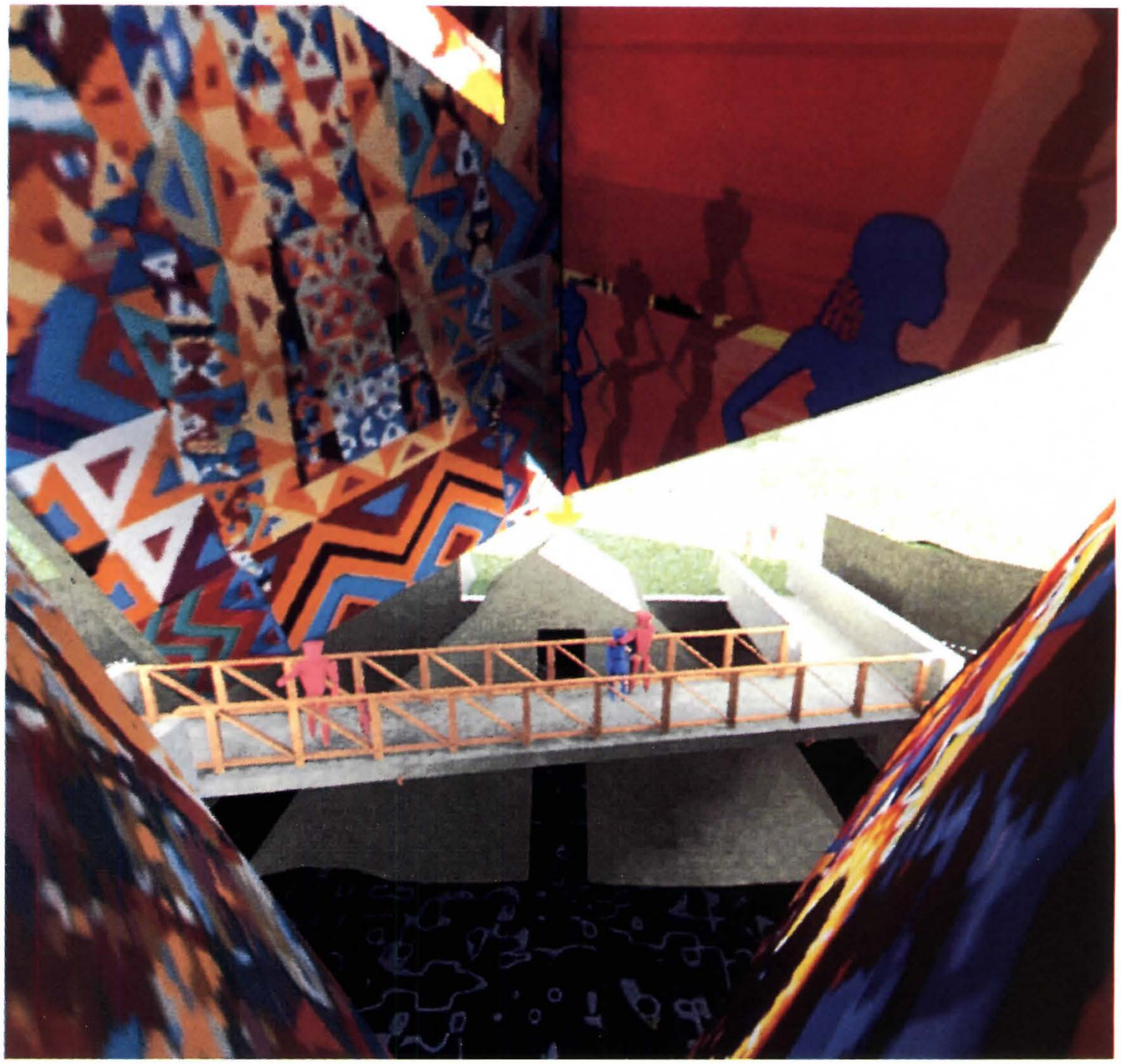
As recently as 1990, only a handful of architecture schools maintained noteworthy computer facilities, and most of those were isolated from design studios and shunned by students. However, "we're seeing a tidal change," contends Chuck Eastman, professor of architecture at the University of California at Los Angeles (UCLA) and director of its Center for Design and Computation. "Where CAD was once viewed as a specialty in education, it is now part of the mainstream."

CAD resources in schools have become less centralized and more portable. Today's typical CAD "facility" is likely to be a laptop computer carried by the student and plugged into the school's network.

With the carrot, however, comes the stick. Eventually, most schools will provide only the network connection, and students will be expected to bring their own computers—a far more costly proposition than buying pens and paper. Some schools utilize CAD technology primarily for instructional purposes, while other learning institutions emphasize software research and development. As certain architecture schools push practical applications, others prefer to concentrate on theoretical investigations.

The following pages examine the diversity of approaches to using computers in four architecture schools. Two of the schools featured, the School of Architecture and Planning at the Massachusetts Institute of Technology and Harvard University's Graduate School of Design, focus largely on the potential of computers in the design studio. The other pair featured in this story, UCLA and the University of Texas at Austin, invest more heavily in specialized research programs separate from design studios and classrooms.—*Douglas MacLeod*

Architect Douglas MacLeod is director of computer applications and research at the Banff Centre for the Arts in Alberta, Canada.



ABOVE RIGHT: Animated rendering of Middle Passage monument prepared by MIT students Larry Sass and Greg Anderson. Alongside computers on studio desktops, MIT emphasizes value of traditional media, such as drawings and models.

School of Architecture Massachusetts Institute of Technology Cambridge, Massachusetts

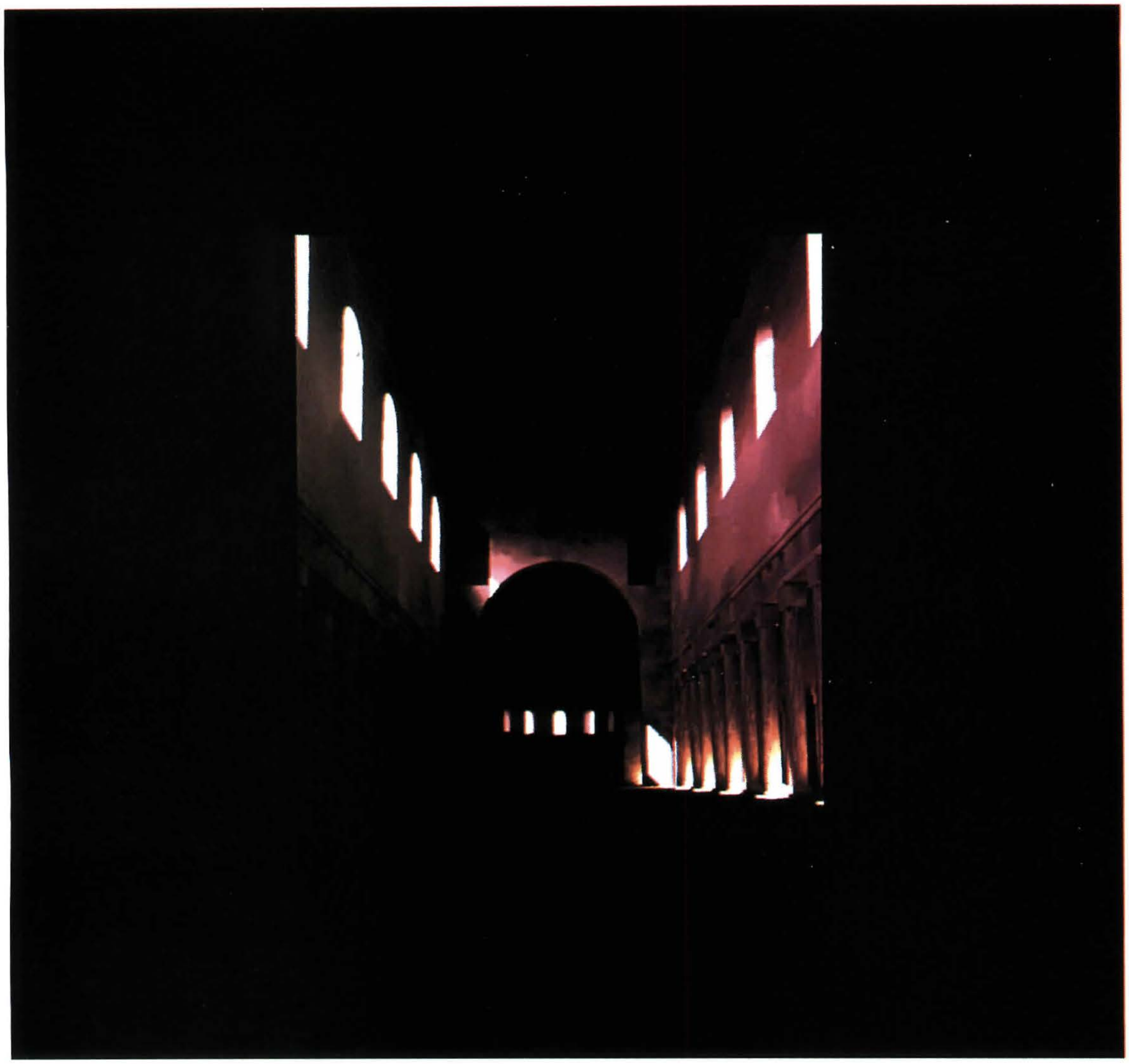
The School of Architecture and Planning at the Massachusetts Institute of Technology supports a culture of advanced digital design research, but the bulk of its resources is directed toward practical, technology-based learning. Students are encouraged to explore new uses for electronic networks and design software, explains Dean William J. Mitchell, yet they are advised to view them as a complement to traditional design tools. Students, for instance, should be able to scan tracing-paper sketches into their computers, or build cardboard models from CAD drawings.

Mitchell was extremely influential in developing computer curricula for architecture schools, first as a professor at UCLA and later on the faculty at Harvard. Among Mitchell's priorities for MIT's architecture school is to abandon the concept of a segregated computer lab entirely. Instead, the school is creating the integrated equivalent of a media lab in the design studio, which is furnished with a fast, powerful file server; high-quality laser printers and plotters; and geometric modeling and simulation software.

The studio also will provide access to a digital image database and include video conferencing capability. Eventually, students will generate three-dimensional models of buildings and components with computer-aided manufacturing (CAM) programs, using numerically controlled machines to cut out parts and pieces guided by the CAD files. CAM programs have been widely used in industrial design but in architecture, Mitchell laments, they are woefully underemphasized.

Eventually, Mitchell assures, every MIT architecture student will be able to explore design and construction ideas with these sophisticated electronic tools. When the current renovation of the school's Wiesner Building is completed, Mitchell maintains, "we'll provide a network connection on every student's desk, along with a server and input/output devices." Most laptop computers now run CAD software, he adds, and the school's "open systems" approach allows students to engage a wide variety of tools, whether they're based in Windows, UNIX, or Macintosh operating systems.

However, technical obstacles, such as better network connections, higher bandwidth for data transmission, and improved audio and video capacity, must be resolved before the electronic studio is fully realized. "All the pieces are around," Mitchell observes, "but it's a real challenge to get them all together and make them work."



Graduate School of Design
Harvard University
Cambridge, Massachusetts

Like MIT, Harvard's Graduate School of Design (GSD) directs most of its computer resources to design students' studio applications rather than to research programs. "We don't have a CAD research unit per se," explains Malcolm M. McCullough, associate professor of architecture. "We try to integrate computers into all our academic programs. The price we pay is that we are not developing software ourselves" as the school has in the past.

In the late 1970s, Harvard's GSD supported a formidable program of computer research in its Laboratory for Computer Graphics and Spatial Analysis. Among the products of that research was the invention of the Geographic Information System (GIS) software, which is now in widespread commercial use since the research program peaked in 1980. GSD's aggressive curriculum of instructional computing was established in 1987 by then Dean Gerald McCue and Professor William J. Mitchell, now the dean of MIT's School of Architecture and Planning. Its studios were furnished with hardware and wired for connections to global networks such as the Internet, as well as for Harvard's own local area network, called Daedalus, thus eliminating the self-contained computer lab.

The school intensively cultivates a stable of staff experts to provide technical support—six full-time staff members manage the school's computer systems. An additional tier of graduate assistants provide software tutorials to undergraduate students; the grad assistants are designated by their software expertise rather than by course.

The school maintains multiple platforms for software in the studios. For example, the Daedalus network, regarded as among the most advanced networks in the United States, operates on the UNIX system, alongside subnetworks Novel (for DOS) and Local Talk (for Macintoshes). Students at the Graduate School of Design typically learn computer skills in teams and are encouraged to master as many kinds of commercially available software as possible.

Among the more prominent design packages in the studios are AutoCAD and PhotoShop. Students also work with 3D Studio, an IBM modeling and animation program; form•Z, modeling software for the Macintosh; and Alias Studio, a high-end animation package for Silicon Graphics workstations. "We discourage students from being chauvinistic about any one platform," contends McCullough, "because they will encounter a variety in the workplace."

ABOVE LEFT: CAD rendering by Harvard GSD students John Goldsmith, Lauren Harvey, and Diego Matho shows historical reconstruction of St. Peter's original nave. The GSD focuses on studio applications rather than specialized research.

ABOVE RIGHT: AutoCAD rendering of small pavilion project by UCLA students Craig Shimahara and Michael Xu. UCLA requires students to train in computer-generated representation.

Department of Architecture and Urban Design University of California at Los Angeles

The Department of Architecture within UCLA's newly reorganized School of the Arts and Architecture exposes students to a substantial palette of CAD products by the time they graduate, but its real distinction is that it boasts one of the nation's few university-based research and development programs for CAD software and applications.

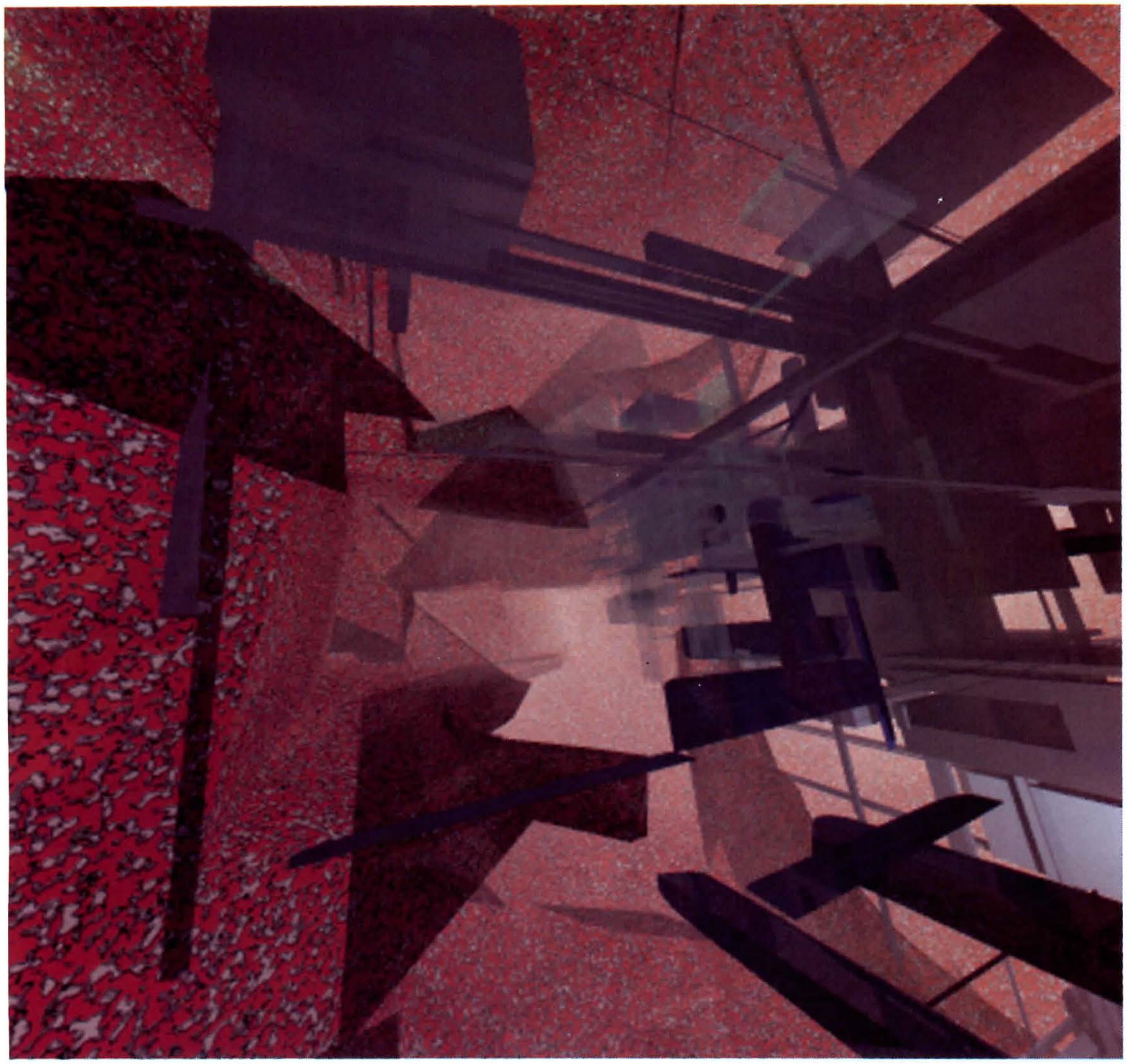
At the M.Arch. and Ph.D. levels, students can pursue an option in Design Computation, working with specialized programming packages such as Inventor or Performer from Silicon Graphics, which contain libraries of graphic functions that allow programmers to create new types of design software. Graduate researchers also devise new digital design tools on the 10 Indigo Extremes workstations that Silicon Graphics has donated.

UCLA's battery of computer equipment gives it one of the most advanced technological infrastructures in the country. A grant from the Los Angeles City Council, for example, enabled UCLA to buy a powerful graphics workstation known as a Reality Engine to create virtual reality models of urban neighborhoods where large development projects are planned. Students in the urban design studios can manipulate this animated imagery to simulate any number of development scenarios. Furthermore, the Reality Engine attaches to an Asynchronous Transmission Mode (ATM) switch, a high-bandwidth network that can transmit virtual environments over the Internet to remote locations where people can view the models.

UCLA's architecture department also performs intensive research in an area known as data integration, which looks for ways to structure digitized design and construction information so it can be moved easily among different computer systems and dissimilar media.

Each of the school's 230 architecture students starts the first year of study with a course in Representation Computing. The school's inventory of hardware has evolved from large mainframe computers, to super minicomputers, to a PC-based environment of time-sharing workstations linked by a file server.

Eastman notes that UCLA, like Harvard and MIT, is moving toward the point where the school will supply the network connections and students will bring their own hardware—at that juncture, distribution of resources will have reached its ultimate state. "If in five years we still talk about our facility as a computer lab," Eastman contends, "then we will have failed to integrate computers into the architecture program."



School of Architecture
University of Texas at Austin

The University of Texas (UT) at Austin, like UCLA, makes a major commitment to research in computer-aided design, with a history of CAD-related research dating back to the 1970s. The school's research agenda has changed somewhat, however, evolving over two decades from the development of new computer tools for practical applications to today's more unconventional, more objective inquiries as to how electronic technology affects the process and the culture of design.

In 1979, UT was the first architecture school to receive support from the National Science Foundation for researching the computer modeling of spatial perception. In addition, computer research at UT in numerical simulation by Professor Francisco Arumi-Noë has been adopted by the Department of Energy as a reference for the energy performance of buildings.

More recently, the school has emphasized critical and analytical explorations of cyberspace, where architects can transmit real-time graphics over advanced telecommunications networks. This study focuses not so much on the mechanics of CAD as on digital technologies' effect on the future of design. "Theoretical investigations are our real strength," asserts Michael Benedikt, professor of architecture and director of UT's Center for American Architecture and Design.

Most of UT's theoretical inquiries are undertaken in the school's Advanced Design Research Program, which Assistant Professor and Director Marcos Novak describes as "a hothouse, or think tank, to bring together experts from disparate disciplines" that rely on digital media. Researchers in the program take ideas of computer-aided design deliberately out of the context of architecture to consider their effect from new angles. The programming of virtual environments or multimedia fly-throughs for clients makes architectural representation a species of performance, Novak submits. "As [architectural representation] happens faster and faster, the acts of making are no longer labor intensive—they're process intensive," he explains. "Design education needs to learn from other disciplines that have dealt with computation this way, such as video and dance."

Still, candidates for architecture degrees still rely largely on conventional materials in the design studio. "We actively discourage students from becoming computer jocks," assures Benedikt. "In fact, at times students are forbidden to use the computers in the CAD studio. We widely agree that the computer is just another tool that has to be worked in with other media."

ABOVE LEFT: CAD rendering called "ArchiMusic Chamber" by UT Assistant Professor Marcos Novak was created with StrataStudio Pro rendering software.

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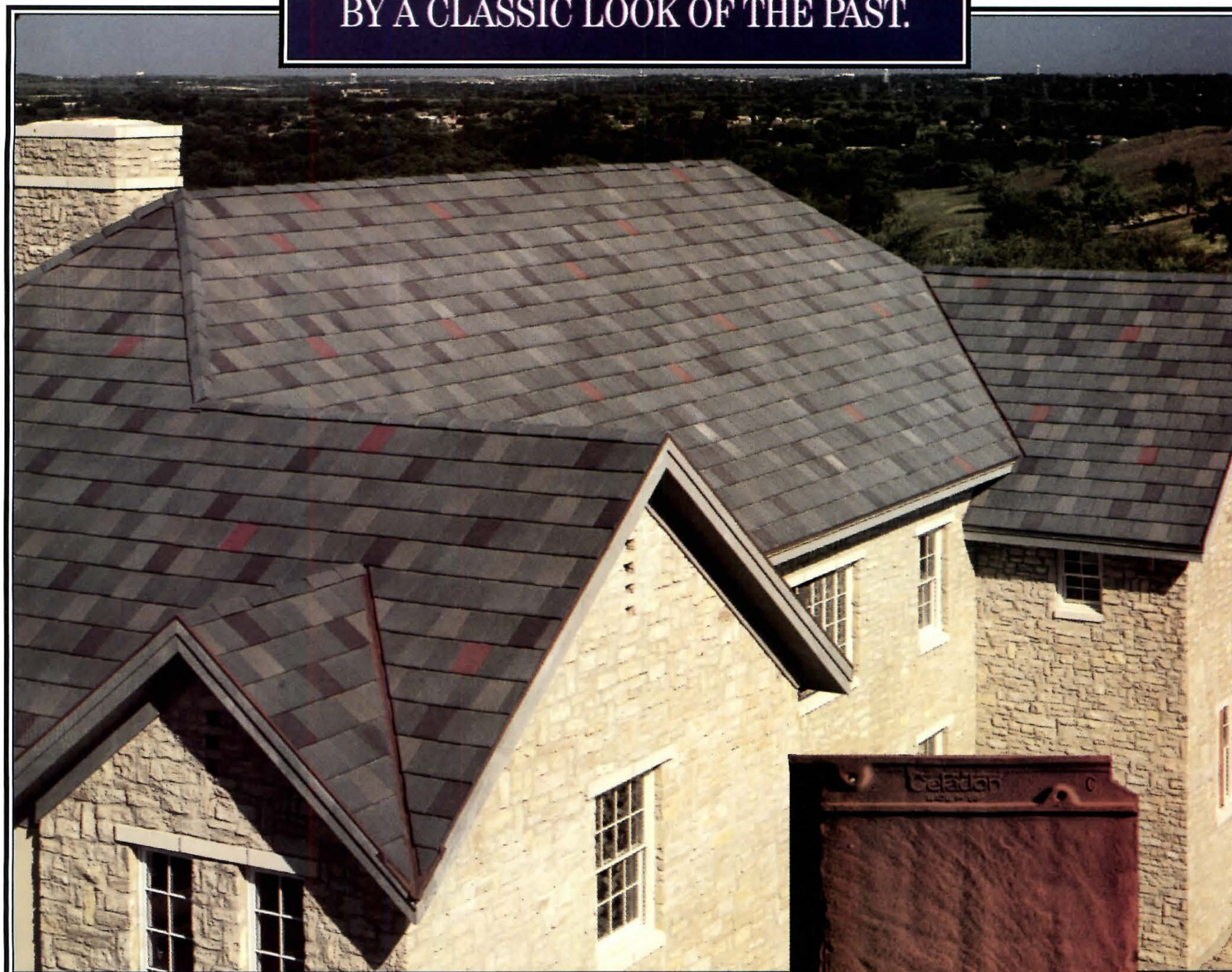

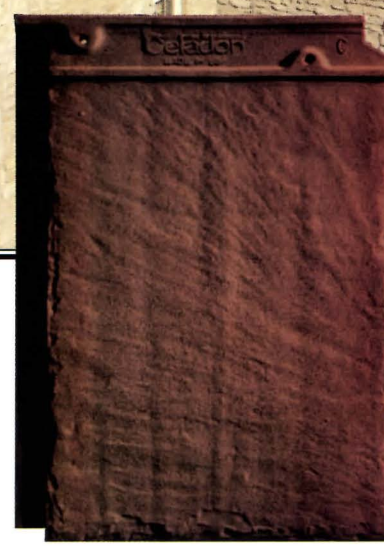

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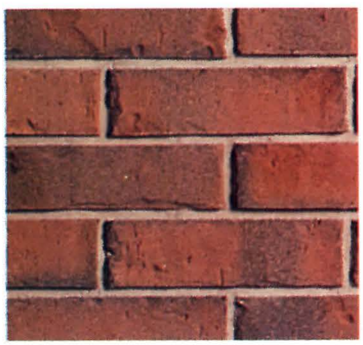
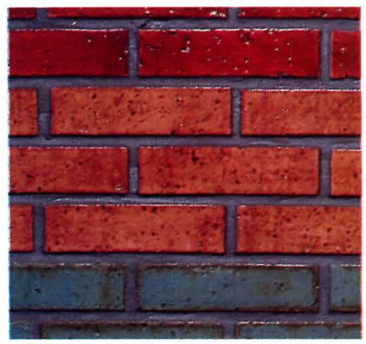
Products

New shapes and colors expand brick's traditional role.





TOP: Boral Bricks erects full-scale mock-ups to help architects select bricks and mortar and to demonstrate compatible roof tile, shutter, and trim. A fireplace vignette (shown) features pink marble inlays and hand-carved brick rosettes. Designed by Atlanta architect Michael Testa, the vignette was sculpted by artist Steve Zouras. Boral Bricks, which is headquartered in Augusta, Georgia, is a subsidiary of Boral Industries.
Circle 401 on information card.

ABOVE: The new Heartland series from the Glen-Gery Corporation includes Wyando brick (shown), which blends orange and red hues. Manufactured in the company's Iberia, Ohio, plant, Heartland is an extruded face brick appropriate for residential and commercial applications. The modular, cored unit measures $3^{5}/8$ inches deep and $7^{5}/8$ inches wide, with a $2^{1}/4$-inch face height. A new $2^{3}/4$-inch-height series will soon be introduced by Glen-Gery Corporation, which is based in Wyomissing, Pennsylvania.
Circle 402 on information card.

ABOVE: Bold colors, such as red, turquoise, and orange, enliven Castaic Brick Company's new glazed solid-clay brick veneer. With a thickness of $^{5}/8$ inch, the veneer is suitable for interior and exterior commercial and residential applications. Each brick face measures $2^{1}/4$ inches high and $8^{1}/2$ inches wide. Castaic's fire-resistant veneer is also available in white, gray, brown, and black.
Circle 403 on information card.

TOP RIGHT: Redland Brick's newest product is the Cushwa chamfered paver, a rectangular unit measuring 4 inches by 8 inches. Purportedly the only wood-mold paver available with a beveled edge, its shape is designed to reduce chipping. Intended for a mortarless setting in a sand base, the Cushwa chamfered paver is easier to handle than standard pavers. Redland Brick is headquartered in Williamsport, Maryland, and comprises three East Coast manufacturing plants: Cushwa of Maryland, Harmar of Pennsylvania, and KF of Connecticut.
Circle 404 on information card.

CENTER: Prestige Lighting introduces the BrickLight. Resembling a standard brick, this lighting fixture is installed flush with the surface of residential and commercial driveways, walkways, decks, or stairs. The unit consists of a low-voltage fixture encased in plastic. GE Plastics manufactures the fixture's Valox resin shell and Lexan polycarbonate resin lens.
Circle 405 on information card.

ABOVE: Bomanite Corporation offers a durable and inexpensive alternative to traditional brick paving. Appropriate for both commercial and residential projects, from walkways and highways to pools and courtyards, Bomanite's cast-in-place concrete paving systems duplicate the appearance of brick as well as slate, granite, and cobblestone. The paving systems can be combined to create various patterns. For example, the company's Herringbone Brick pattern (left) is separated from the Fishscale Cobblestone pattern (right) by 18-inch textured concrete blocks (center diagonal).
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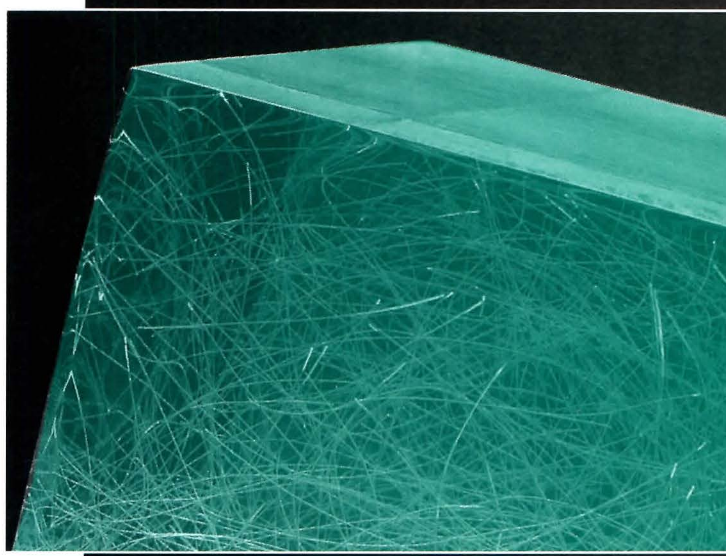

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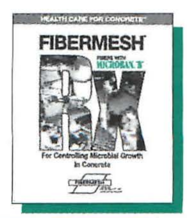

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Brick hotline
The Brick Institute of America offers a 24-hour technical information service through telefax. Brick Fax enables callers to receive any of the Brick Institute's Technical Notes that contain design, detailing, and construction information on the latest developments in brick masonry. Drawings, photographs, tables, and charts illustrate the reference notes, which range in length from 4 to 16 pages. Each bulletin costs $2. An index of notes is offered free of charge.
Circle 408 on information card.

Clay units
Low-maintenance and fire resistant, Louisiana Pacific's high density new clay Durabricks (above) are purportedly stronger and more durable than cement bricks. They are available in a range of natural red colors and four styles: standard and core units both feature an $8^1/8$-inch length, $2^1/4$-inch height, and $3^7/8$-inch depth; split style reduces the height to $1^1/2$ inches; and a single rounded edge distinguishes the clay unit's cored bullnose style.
Circle 409 on information card.

Gray brick
The Western series from Canada Brick features white (above), light gray, and medium gray bricks, manufactured in a matte or textured rock face. Three face sizes are available: Metric Modular, which is $7^1/2$ inches in length and $2^1/4$ inches in height; Metric Jumbo, $11^1/2$ inches in length and $3^1/2$ inches in height; and CSR, measuring $9^1/16$ inches by $2^3/4$ inches. Canada Brick and U.S. Brick are both divisions of Toronto-based Jannock Limited.
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WestWeek Preview

WestWeek '95, the annual design exposition and symposium for trade professionals, will be held March 14-17 at the Pacific Design Center in Los Angeles. This year's theme: "How the West Is One." AIA Los Angeles is sponsoring a program on Western design; panelists include William Bruder and James Cutler. For information call (310) 657-0800. The following products will be displayed.

Southwestern fabric
DesignTex Fabrics introduces Serape (above), a heavy-duty upholstery fabric inspired by the great American southwestern desert: Terra-cotta, adobe, and sagebrush appear throughout the fabric's seven available colorways. Named for a Latin American cloak or poncho, the 68 percent cotton and 32 percent polyester blend features a repeat of over 20 inches.
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The newest seating from Steelcase combines the comforts of home with the practicality of the workplace. Purported to be more comfortable than a typical task chair, Rapport features a separate backrest pillow that adjusts through a 4-inch range for optimal lumbar support. Additional options include movable arm rests and variable back stop.
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Recreational design
Comfort and function link two distinct furniture lines. The Serenity sofa (above) from Tiffany & Tiffany complements the husband and wife team's Spirit Collection of vintage furniture. For outdoor use, Summit Furniture offers the Sun Deck collection, designed by John Munford. Summit's teak chaise (below) utilizes solid brass hardware.
Circle 414 on information card for Serenity; circle 415 for Sun Deck.

European office
Haworth's European Collection consists of 12 furniture lines developed by affiliated Italian and French companies, available for the first time in the United States. The Mobilier collection, including Chaffeuse Delta tubular steel chairs (above), is one of the Holland, Michigan-based company's most successful furniture lines.
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Specifications Institute (CSI), Group C Communications (the publisher of *Today's Facility Manager and Business Facilities*), BPI Communications (the publisher of *Interiors and Architecture*), *Managing Office Technology*, *Facilities Design & Management*, *Contract Design*, *Interior Design and Canadian Facility Management & Design*. These outstanding organizations and publications will provide a full variety of educational programs for attendees who will be able to select from a multitude of sessions, thus creating a personalized conference program.

In addition, highly-rated keynote and general session speakers such as Lester Thurow, author of *Head to Head: The Coming Economic Battle Among Japan, Europe and America* and Don Tapscott, author of *Paradigm Shift: The New Promise of Information Technology*, will contribute to the industry's most comprehensive event. Thurow is a world-renowned economist who has authored several widely-acclaimed books including bestsellers *The Zero-Sum Society* and *The Zero-Sum Solution*. Tapscott is formerly vice president, technology, of the DMR Group Inc., a leading international provider of information technology services to businesses and public enterprises. He also is the author of several books, numerous papers and articles on the application of technology to business.

"World Workplace '95 provides an opportunity for real estate executives to interact with the many other professionals involved in the workplace industry. The networking and educational opportunities will be of tremendous benefit to all attendees. In addition, the World Workplace format is very innovative for this industry."

John E. Blake, MCR
Chairman, NACORE International

"By integrating programs and aligning expertise, the participating organizations provide the World Workplace attendee with the opportunity for education unmatched anywhere in the world," said M. Weldon Rogers III, BIFMA president. "All workplace professionals can now 'create their own conference' by picking and choosing sessions provided by the different organizations."

Dramatic new concept.

A learning center as opposed to a traditional "expo," World Workplace directly links the educational program to the exposition, making the entire event completely integrated. Attendees will be able to study about a targeted subject in an educational session taught by an impartial third-party expert, and then be directed to specific exhibits where they'll find product and service solutions addressing the subject they just learned about. Icons will be utilized to code and cross reference exhibits and educational sessions for easy reference. For instance, if an attendee is interested in ergonomics, the World Workplace program literature identifies the educational sessions that address the specific topic and the exhibits that feature ergonomic solutions. It provides the attendee with the advantage of comparing and contrasting educational components with the manufacturer and service provider exhibits.

Highly diversified exposition.

More than 250 exhibitors have already committed to participate in World Workplace. Among the cross-section of companies participating are: Dow, DuPont, Environsense Consortium Inc., Indiana Furniture Industries, ISS International Service System, Johnson Controls Inc., Law Engineering, Ledalite Architectural Products Inc., Maintenance Automation Corp., Mayflower Transit, Pitney Bowes Management, Sylvania Lighting Services, 3M and Xerox Business Services.

World Workplace Consortium.

The Consortium, a joint partnership between two leading non-profit associations, the International Facility Management Association (IFMA) and the Business and Institutional Furniture Manufacturer's Association (BIFMA), was developed in December 1993 to address changing workplace needs. World Workplace '95 was designed by the Consortium to bring together workplace professionals from many different disciplines, including facility executives, interior designers, building managers, architects, real-estate professionals, engineers, property managers, leasing agents, lighting designers and security professionals.

World Workplace '95.
Contact World Workplace at (713) 62-WORLD or fax (713) 623-6124.

World Workplace™

Details

Unit stone masonry provides cost-effective cladding for a campus library.

1. ANODIZED ALUMINUM FINIAL
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3. UNIT STONE MASONRY VENEER
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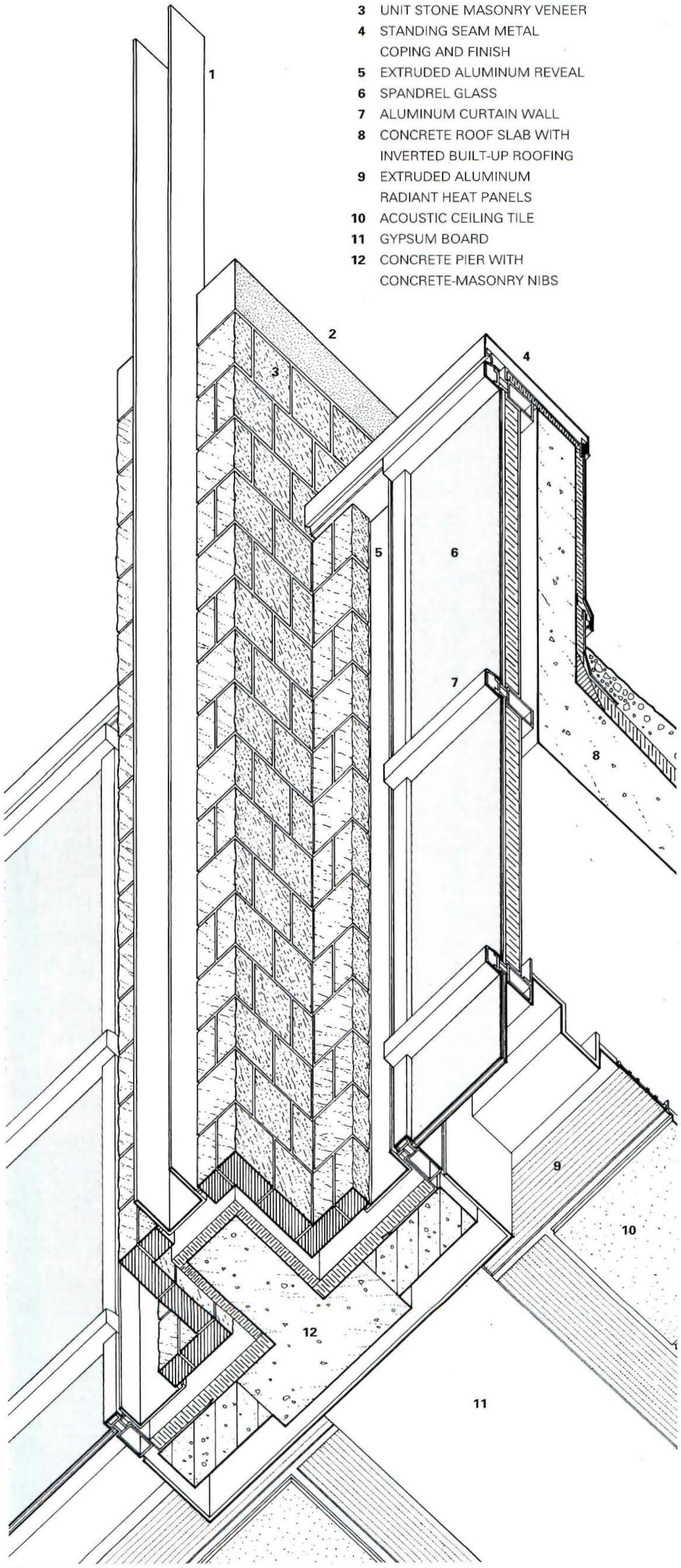
5. EXTRUDED ALUMINUM REVEAL
6. SPANDREL GLASS
7. ALUMINUM CURTAIN WALL
8. CONCRETE ROOF SLAB WITH INVERTED BUILT-UP ROOFING
9. EXTRUDED ALUMINUM RADIANT HEAT PANELS
10. ACOUSTIC CEILING TILE
11. GYPSUM BOARD
12. CONCRETE PIER WITH CONCRETE-MASONRY NIBS



CLADDING DETAIL

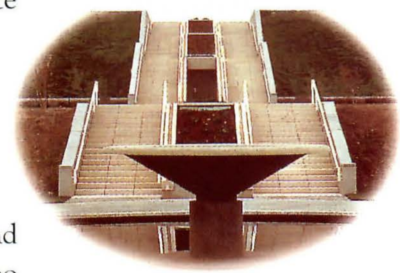
JEFF GOLDBERG / ESTO PHOTOS

Joseph S. Stauffer Library
Queen's University
Kingston, Ontario
Kuwabara Payne McKenna Blumberg Architects

To clad a university library addition (pages 86-93, this issue), architects Kuwabara Payne McKenna Blumberg (KPMB) specified limestone units, separated from a precast concrete backup wall by a 5-inch-deep cavity, to minimize manufacturing and installation costs. By limiting the size of the stone blocks to $7^5/8$ inches high by $7^5/8$ inches wide by $3^5/8$ inches deep, they employed less costly brick masons. Leaving the edges of the 240,000 hydraulically split blocks unpitched also eliminated the expensive task of hand chiseling. KPMB crowned the piers with Gothic-inspired finials, composed of anodized aluminum channels fastened with aluminum brackets.—*R.A.B.*

Open Spaces Come Alive With Terra-Pavers

Turn those ho-hum roof and plaza decks into more usable contemporary spaces.



Precast concrete pavers from Wausau Tile can transform those outdoor areas and provide protection for roof and deck structures, too. Use Terra-Pavers for new construction or easy renovation of failing roof decks. Pavers install on-grade or with the patented Terra-System One® elevated system for sloped and level surfaces.

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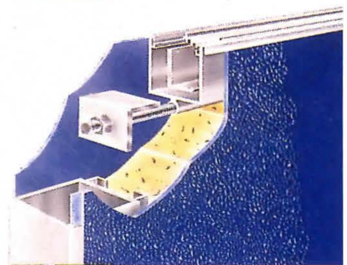
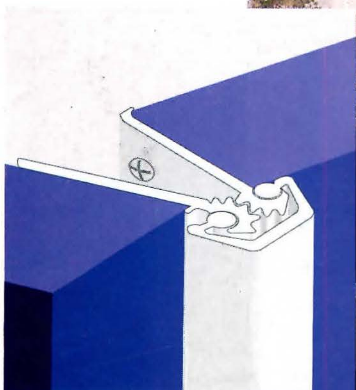
Circle 131 on information card

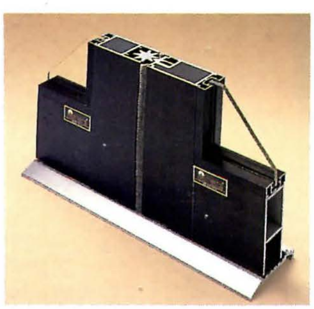
The Vision Lite FRP Flush Panel Door is designed for extreme physical abuse, corrosive environmental conditions, high humidity and sanitary environments. Aluminum skin available; lites optional.



The Continuous Gear Hinge bonds door and frame, which dissipates energy along the length of the door and adds years of maintenance-free life to the entrance. Available on Vision Lite and other Vistawall doors.



We've Passed Entrance Tests And Physical Exams In Schools And Hospitals Everywhere.



Vistawall's patented Nightwatch panic entrance features a rotary astragal that deters break-ins. Available on virtually all Vistawall doors.

Architects have specified Vistawall specialty entrances for institutional uses all over the country. These doors and entrances are engineered to offer the attractive appearance, physical strength and long-lasting durability required in high-traffic, public buildings. And all entrances meet ADA. Call us today to learn more about our quality construction techniques that have passed entrance tests for almost 50 years.

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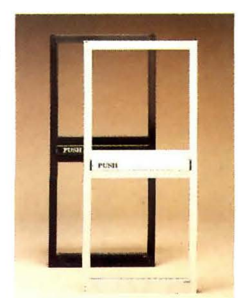

The VIP mid-panel panic entrance allows you to meet building codes and still create an attractive design by neatly incorporating the easily identified and accessible release mechanism into a 9-inch mid-panel.

Circle 133 on information card

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